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Naval Oceanographic Office

Bay St. Louis
NSTL,
Mississippi 39522-5001

RP 34 (87)
March 1987

ORIGINAL

COMPLETED 378

RP 34 (87)

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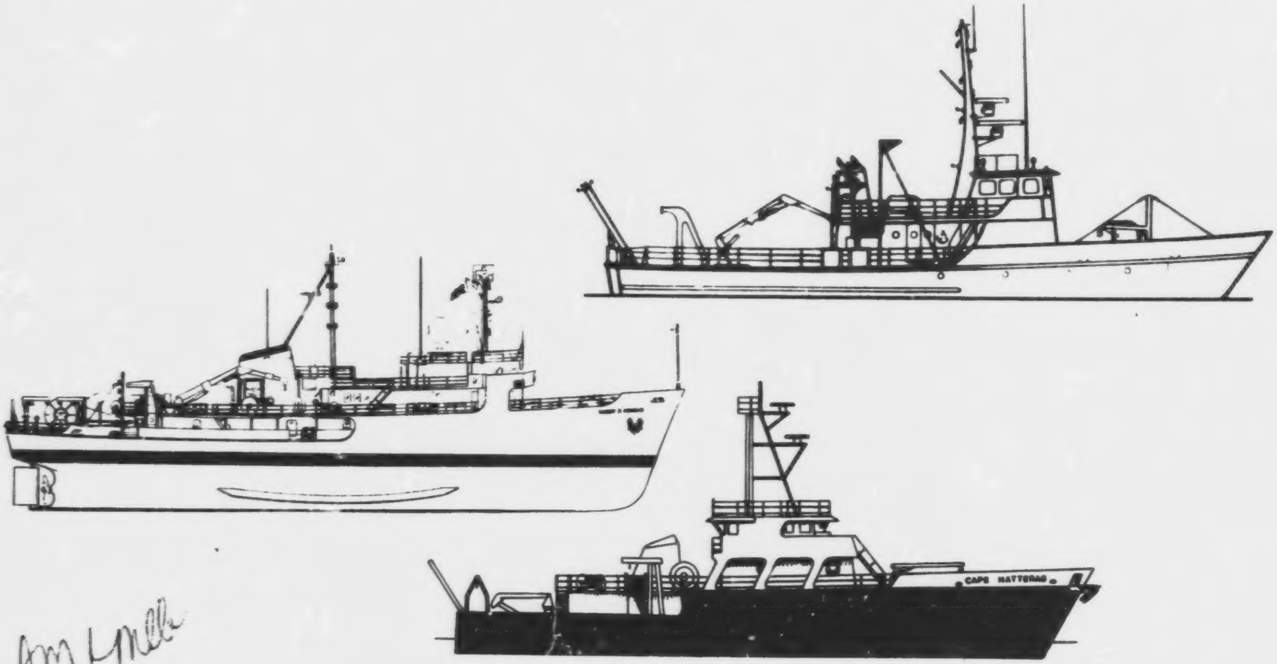
NATIONAL OCEANOGRAPHIC FLEET OPERATING SCHEDULES FOR 1987

NAVY·UNOLS·NOAA·UNIVERSITY·USCG·FEDERAL



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Prepared under the authority of
**Commander,
Naval Oceanography Command**

FOREWORD

The Naval Oceanographic Office (NAVOCEANO) is pleased to publish the *National Oceanographic Fleet Operating Schedules for 1987*. Distribution is made to those individuals and activities involved in planning, scheduling and coordinating U.S. oceanographic ship operations.

As ship operating expenses increase, efficiency of operations becomes a key ingredient for an effective national oceanographic program. To this end, efforts must be made to maximize the use of existing oceanographic platforms, by "piggybacking" of projects, exchange of oceanographic data and the coordination of schedules. This publication serves as one means of assisting sponsoring activities and user organizations in effective management of national oceanographic assets.

In light of this effort, and recognizing that many ocean-capable vessels specifically configured for oceanographic research and hydrographic surveying exist in the private sector (representing a definite national asset), this edition includes some schedules of vessels operated by commercial concerns. An invitation is extended to other commercial concerns which operate specifically configured, deep-ocean-capable, oceanographic or hydrographic vessels to include their schedules in future editions.

This publication has been developed from the latest data contained in NAVOCEANO's computerized Research Vehicle Reference Service (RVRS), a subset of the Oceanographic Management Information System (OMIS). The service was established to provide a centralized source of information on ship characteristics, latest schedules, last known positions and points of contact for the ship operators. Participation in this reference system by ship operators, potential users and by activities otherwise concerned with oceanographic ship operations is invited.

For information on schedule changes or modifications of vessel capabilities and related questions, please address correspondence to Commanding Officer, Naval Oceanographic Office (Attention: OMIS Staff, Code 5003), Bay St. Louis, NSTL, MS 39522-5001, or call commercial (601) 688-5126/AUTOVON 485-5126/FTS 494-5126.

WILLIAM J. ZUBERBUHLER
Captain, U.S. Navy
Commanding Officer

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION: UNCLASSIFIED

1b RESTRICTIVE MARKINGS

2a SECURITY CLASSIFICATION AUTHORITY

2b. DECLASSIFICATION / DOWNGRADING SCHEDULE

3 DISTRIBUTION / AVAILABILITY OF REPORT: Approved for public release; distributic unlimited .

4. PERFORMING ORGANIZATION REPORT NUMBER(S): RP 34(87)

5 MONITORING ORGANIZATION REPORT NUMBER(S)

6a NAME OF PERFORMING ORGANIZATION:
Commanding Officer
Naval Oceanographic Office

6b OFFICE SYMBOL *(If applicable)*

7a NAME OF MONITORING ORGANIZATION:
Commander
Naval Oceanography Command

6c. ADDRESS *(City, State, and ZIP Code)*:
Bay St. Louis
NSTL, MS 39522-5001

7b ADDRESS *(City, State, and ZIP Code)*:
NSTL, MS 39529-5000

8a. NAME OF FUNDING / SPONSORING ORGANIZATION: Naval Oceanographic Office

8b OFFICE SYMBOL *(If applicable)*

9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER

8c. ADDRESS *(City, State, and ZIP Code)*:
Bay St. Louis
NSTL, MS 39522-5001

10 SOURCE OF FUNDING NUMBERS

PROGRAM ELEMENT NO	PROJECT NO	TASK NO	WORK UNIT ACCESSION NO

11. TITLE *(Include Security Classification)*: NATIONAL OCEANOGRAPHIC FLEET OPERATING SCHEDULES FOR 1987

12. PERSONAL AUTHOR(S)

13a. TYPE OF REPORT: Reference Publication

13b TIME COVERED: FROM 1 Jan TO 31 Dec 87

14 DATE OF REPORT *(Year, Month, Day)*: 31 March 1987

15 PAGE COUNT

16. SUPPLEMENTARY NOTATION

17 COSATI CODES

FIELD	GROUP	SUB-GROUP

18 SUBJECT TERMS *(Continue on reverse if necessary and identify by block number)*: Oceanography, Oceanographic Ships, Schedules

19 ABSTRACT *(Continue on reverse if necessary and identify by block number)*

This publication provides the national oceanographic fleet operating schedules for 1987. The data were derived from the latest inputs into the Naval Oceanographic Office's Research Vehicle Reference Service, a subset of the Oceanographic Management Information System.

20 DISTRIBUTION / AVAILABILITY OF ABSTRACT
☐ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS

21. ABSTRACT SECURITY CLASSIFICATION

22a NAME OF RESPONSIBLE INDIVIDUAL

22b TELEPHONE *(Include Area Code)*

22c OFFICE SYMBOL

DD FORM 1473, 84 MAR

83 APR edition may be used until exhausted
All other editions are obsolete

SECURITY CLASSIFICATION OF THIS PAGE

☆ U.S. Government Printing Office: 1986—607-044

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TABLE OF CONTENTS

PAGE

FOREWORD
INTRODUCTION 1
RESEARCH VEHICLE REFERENCE SYSTEM OVERVIEW 1
RESEARCH VEHICLE REFERENCE SYSTEM USAGE 2
PROCEDURES FOR REPORTING SURFACE AND SUBSURFACE OBSTACLES 2
QUARTERLY OPERATIONAL SUMMARIES 5
STANDARD NAVY OCEAN AREA AND REGION INDEX LIMITS 9

ACADEMIC INSTITUTIONS - UNIVERSITY NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

UNIVERSITY OF ALASKA

ALPHA HELIX 11

UNIVERSITY OF DELAWARE

CAPE HENLOPEN 18

DUKE UNIVERSITY

CAPE HATTERAS 27

UNIVERSITY OF HAWAII

MOANA WAVE 35
KILA 41

JOHNS HOPKINS UNIVERSITY

RIDGELY WARFIELD 45

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

ROBERT D. CONRAD 53

UNIVERSITY OF MIAMI

CALANUS 59
COLUMBUS ISELIN 63

MOSS LANDING MARINE LABORATORIES

CAYUSE 69
POINT SUR 75

OREGON STATE UNIVERSITY

WECOMA 83

UNIVERSITY OF RHODE ISLAND

ENDEAVOR 89

TABLE OF CONTENTS (CONTINUED)

SCRIPPS INSTITUTE OF OCEANOGRAPHY

MELVILLE 95
NEW HORIZON 101
THOMAS WASHINGTON 107
FLIP 113
ORB 117
ROBERT GORDON SPROUL 121

SKIDAWAY INSTITUTE OF OCEANOGRAPHY

BLUE FIN 129

UNIVERSITY OF SOUTHERN CALIFORNIA

OPSREY 133

TEXAS A&M UNIVERSITY

GYRE 139

UNIVERSITY OF TEXAS

FRED H. MOORE 147
LONGHORN 153

UNIVERSITY OF WASHINGTON

THOMAS G. THOMPSON 157
CLIFFORD A. BARNES 165

WOODS HOLE OCEANOGRAPHIC INSTITUTION

ATLANTIS II 169
KNORR 175
OCEANUS 181

UNIVERSITY OF MICHIGAN

LAURENTIAN 187

OLD DOMINION UNIVERSITY (ASSOCIATE UNOLS MEMBER)

LINWOOD HOLTON 193

TABLE OF CONTENTS (CONTINUED)

OTHER OCEANOGRAPHIC SHIPS

HARBOR BRANCH OCEANOGRAPHIC INSTITUTION

EDWIN LINK 197
SEA DIVER 199
SEWARD JOHNSON 201

SEA EDUCATION ASSOCIATION

WESTWARD 204

OTHER UNIVERSITY SHIPS 207

- AQUALAB III
- AQUARIUS
- BELLOWS
- C. A. DAMBACH
- CORSAIR
- CRAWFORD
- DELAWARE BAY
- DELPHINUS
- EDGERTON
- ENDLESS SEAS
- G. A. ROUNSEFELL
- GULF RESEARCHER
- HOBART & WILLIAM SMITH EXPLORER
- MEDUSA
- NEESKAY
- NORTH STAR
- ONRUST
- ORION
- RETRIEVER
- SEAHAWK
- SUNCOASTER
- TURSIOPS
- UCONN
- VANTUNA
- WEATHERBIRD

FEDERAL AGENCIES
DEPARTMENT OF DEFENSE, NAVAL OCEANOGRAPHIC OFFICE

USNS BARTLETT (T-AGOR 13) 211
USNS DE STEIGUER (T-AGOR 12) 213
USNS LYNCH (T-AGOR 7) 216

DEPARTMENT OF DEFENSE, NAVAL UNDERWATER SYSTEMS CENTER

ERLINE 218

TABLE OF CONTENTS (CONTINUED)

DEPARTMENT OF TRANSPORTATION, U.S. COAST GUARD

USCGC GLACIER 221
USCGC NORTHWIND 223
USCGC POLAR SEA 225
USCGC POLAR STAR 227
USCGC WESTWIND 229

NATIONAL SCIENCE FOUNDATION

POLAR DUKE 231

DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ALBATROSS IV 233
CHAPMAN 236
JOHN N. COBB 239
TOWNSEND CROMWELL 243
DAVIDSON 247
DELAWARE II 251
DISCOVERER 255
FAIRWEATHER 257
FERREL 261
MILLER FREEMAN 263
HECK 267
DAVID STARR JORDAN 271
MCARTHUR 275
MT. MITCHELL 277
MURRE II 279
OREGON II 281
PEIRCE 285
RAINIER 287
RESEARCHER 289
RUDE 293
SURVEYOR 297
WHITING 299

DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY

USNS SAMUEL P. LEE 303

ENVIRONMENTAL PROTECTION AGENCY

PETER W. ANDERSON 305

OPEN (UNOBLIGATED) OCEANOGRAPHIC SHIP TIME 307

INTRODUCTION

This publication presents the 1987 operating schedules for the national oceanographic fleet. Schedules are provided for over 70 ships which operate under various academic, governmental or commercial organizations. Included with each ship schedule is information on ship characteristics, engineering/deck equipment, and a point of contact. For convenience, quarterly ship-operational summaries are provided, allowing the user to determine which ships are operating in a particular ocean area of interest during a particular timeframe.

The information presented in this publication was derived from the latest data contained in the computer-based Research Vehicle Reference Service (RVRS), a subset of the Oceanographic Management Information System (OMIS) at the Naval Oceanographic Office.

RESEARCH VEHICLE REFERENCE SYSTEM OVERVIEW

In 1978, OMIS was initiated at the Naval Oceanographic Office to provide essential information on oceanographic activities within the Navy. The first areas considered for automation were oceanographic research and survey vessels, which led to the RVRS subset.

The RVRS was first envisioned to provide information only on federally funded and operated vessels. However, with the limited number of platforms available conducting oceanographic research projects and increasing operating costs, the inclusion of as many ships as possible into RVRS was considered essential. Principal users were those involved in assessing the national fleet's capabilities or in determining the availability of a ship for a future cruise requirement. In this regard, the latest ship locations and desired ship missions were necessary.

Concentration has been placed on the identification and incorporation of oceanographic ships over 65 ft. in length. Physical characteristics are tabulated in RVRS by recognizing approximately 100 different factors which are categorized by engineering/deck equipment dimensions, administrative details, points of contact for the physical plant, the routine onboard electronics suite, and fuel consumption details. The purpose is to give a comprehensive description of a ship's physical capabilities for planning purposes. Each ship's operating schedule is maintained in the system. Original schedules for each year, as well as schedule changes, are forwarded to the OMIS from appropriate sources. Port-to-port cruise information is subsequently displayed with the cruise objective, program, principal scientist, sponsoring organization and projected days at sea. Also, the date of update and the operating area are indicated. Smaller oceanographic vessels that make cruises of relatively short duration and distance from home port usually have a general statement reflecting their operations. Schedules which have "open" periods (e.g., time which has not been obligated to a particular project, transit or repair) are noted so that they can be collectively sorted and analyzed.

Current mission, status, location and time are updated daily into RVRS for most of the large vessels in the federal fleet. Course and speed are included when available. Information is obtained from synoptic weather and bathythermograph observation messages by phone, or is entered directly by the shore-based ship operators.

RESEARCH VEHICLE REFERENCE SYSTEM USAGE

RVRS was developed to simplify user access to the retrieval program. The operator selects the desired information from a basic question set which includes: information on ship schedules within a certain ocean area or specific time span, ships in an area based on last reported position, points of contact and physical characteristics.

There are a number of small, inexpensive remote computer terminals available today which can be used to interface RVRS through a standard desk telephone. The terminal must be the dial-up asynchronous type and be teletype-compatible. A 300 baud line capability is required along with a standard RS232 interface configuration. Twenty-five organizations currently have remote terminal access to the data base.

Special requirements for information may require analysis of the RVRS data base in a manner different from the standard questions. For example, the question "Identify all ships over 150 ft. in length which have satellite navigation capability" would require an input from an RVRS Subject Matter Specialist. To receive this special support, address correspondence to the Commanding Officer, Naval Oceanographic Office (Attention: OMIS Staff, Code 5003), Bay St. Louis, NSTL, MS 39522-5001, or call commercial (601) 688-5126/AUTOVON 485-5126/FTS 494-5126. In addition to answering standard queries from those who do not have a remote terminal available, the RVRS Subject Matter Specialist is also a source for the "Research Vehicle Reference Service User's Guide" for the interactive data retrieval program.

PROCEDURES FOR REPORTING SURFACE AND SUBSURFACE OBSTACLES

The Defense Mapping Agency Hydrographic/Topographic Center (DMAHTC) is the point of contact for ship operations that use sonic emitters, towed devices or explosive charges. Such operations present special hazards to submarine operation and navigation. DMAHTC has agreed to disseminate information concerning underwater hazards as part of the Notice-to-Mariners system. The intent of the new reporting procedures is to eliminate mutual interference problems and equipment damage between ongoing and planned operations by advising units at sea of surface and subsurface obstacles. The revised Notice-to-Mariners system relies on the cooperation of the maritime community (military, government and commercial). Timely notification to DMAHTC is needed for all operations that install moored underwater instrumentation, tow or drag devices of any kind, or use sonic emitters or explosives. DMAHTC will disseminate information as follows:

a. For moored instrumentation in depths of 300 meters or less (the maximum depth where damage could result from normal fishing operations), information will be broadcast as a radio navigational warning and reprinted in Section III of the Notice to Mariners.

b. For moored instrumentation in depths greater than 300 meters, the information will not be broadcast. Documentation will be forwarded to appropriate Naval Commands for their use.

c. For tow or drag devices of any kind, sonic emitters, or explosives, the information will be broadcast as a radio navigational warning.

Commercial companies are not required to provide operational information to DMAHTC but are encouraged to do so. The DMAHTC point of contact for information and notification is Defense Mapping Agency Hydrographic/Topographic Center, Notice to Mariners Branch (Attention: Broadcast Watch), Washington, DC 20315-0030, commercial (202) 227-3146/AUTOVON 287-3146, TELEX 898334, DMAHTC Washington, DC (Broadcast Watch work hours 0700-2400, 7 days a week).

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JANUARY - MARCH 1987
AREAS OF OPERATION

	NO.WEST PACIFIC	NO.EAST PACIFIC	SOUTH PACIFIC	NORTH ATLANT.	SOUTH ATLANT.	MEDITER. SEA	INDIAN OCEAN
ALBATROSS IV				*			
ALPHA HELIX		*					
ATLANTIS II	*	*					
BLUE FIN				*			
CALANUS				*			
CAPE HATTERAS				*			
CAPE HENLOPEN				*			
CAYUSE							
CHAPMAN				*			
CLIFFORD A. BARNES		*					
COLUMBUS ISELIN				*		*	
DAVID STARR JORDAN		*					
DAVIDSON		*					
DELAWARE II				*			
DISCOVERER							
EDWIN LINK				*			
ENDEAVOR				*			
ERLINE				*			
FAIRWEATHER		*					
FERREL				*			
FRED H. MOORE		*		*			
GYRE				*			
HECK				*			
JOHN N. COBB		*					
KILA		*					
KNORR				*			
LINWOOD HOLTON				*			
LONGHORN				*			
MCARTHUR							
MELVILLE		*	*				
MILLER FREEMAN		*					
MOANA WAVE		*	*				
MT. MITCHELL		*					
MURRE II		*					
NEW HORIZON		*					
OCEANUS				*			
OREGON II				*			
OSPREY		*					
PEIRCE							
PETER W. ANDERSON				*			
POINT SUR		*					
POLAR DUKE			*				
RAINIER							
RESEARCHER				*			
RIDGELY WARFIELD				*			
ROBERT D. CONRAD			*				
ROBERT G. SPROUL		*					
RUDE				*			
SEA DIVER				*			
SEWARD JOHNSON				*			
SURVEYOR		*					
THOMAS G. THOMPSON		*					
THOMAS WASHINGTON		*	*				
TOWNSEND CROMWELL		*	*				
USCGC GLACIER			*				
USCGC NORTHWIND				*			
USCGC POLAR SEA			*				
USCGC POLAR STAR	*	*					
USCGC WESTWIND				*			
WECOMA		*	*				
WESTWARD				*			
WHITING				*			

APRIL - JUNE 1987
AREAS OF OPERATION

	NO.WEST PACIFIC	NO.EAST PACIFIC	SOUTH PACIFIC	NORTH ATLANT.	SOUTH ATLANT.	MEDITER. SEA	INDIAN OCEAN
ALBATROSS IV				*			
ALPHA HELIX	*	*					
ATLANTIS II	*						
BLUE FIN				*			
CALANUS				*			
CAPE HATTERAS				*			
CAPE HENLOPEN				*			
CAYUSE							
CHAPMAN				*			
CLIFFORD A. BARNES		*					
COLUMBUS ISELIN				*			
DAVID STARR JORDAN		*					
DAVIDSON		*					
DELAWARE II				*			
DISCOVERER		*					
EDWIN LINK				*			
ENDEAVOR				*			
ERLINE				*			
FAIRWEATHER		*					
FERREL							
FRED H. MOORE	*	*					
GYRE				*			
HECK				*			
JOHN N. COBB		*					
KILA		*					
KNORR							
LINWOOD HOLTON				*			
LONGHORN				*			
MCARTHUR		*					
MELVILLE		*					
MILLER FREEMAN	*	*					
MOANA WAVE		*	*				
MT. MITCHELL							
MURRE II							
NEW HORIZON		*					
OCEANUS				*			
OREGON II				*			
OSPREY		*					
PEIRCE							
PETER W. ANDERSON				*			
POINT SUR		*					
POLAR DUKE			*				
RAINIER	*	*					
RESEARCHER		*	*	*			
RIDGELY WARFIELD				*			
ROBERT D. CONRAD					*		
ROBERT G. SPROUL		*					
RUDE				*			
SEA DIVER				*			
SEWARD JOHNSON				*			
SURVEYOR	*	*					
THOMAS G. THOMPSON	*	*					
THOMAS WASHINGTON		*	*				
TOWNSEND CROMWELL	*	*					
USCGC GLACIER		*					
USCGC NORTHWIND				*			
USCGC POLAR SEA		*					
USCGC POLAR STAR		*					
USCGC WESTWIND				*			
WECOMA		*	*				
WESTWARD				*			
WHITING				*			

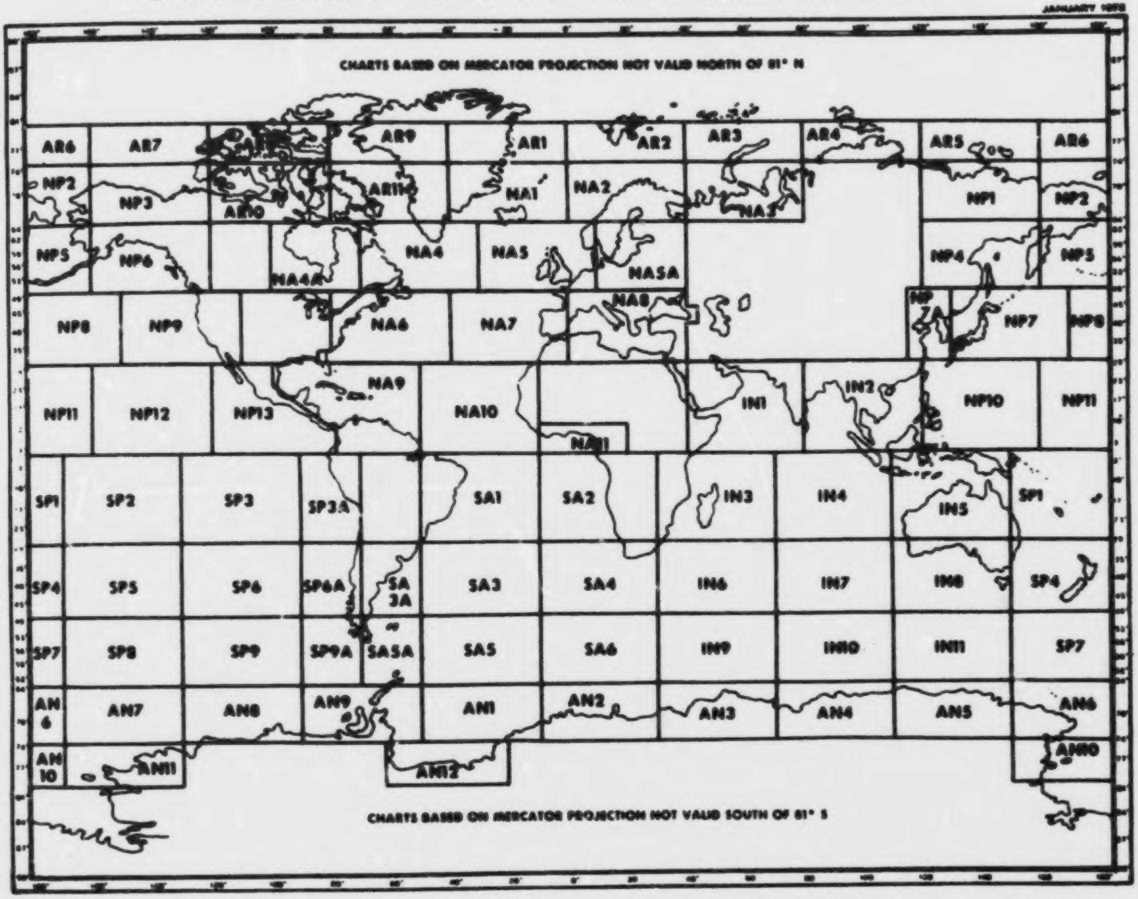
JULY - SEPTEMBER 1987
AREAS OF OPERATION

	NO.WEST PACIFIC	NO.EAST PACIFIC	SOUTH PACIFIC	NORTH ATLANT.	SOUTH ATLANT.	MEDITER. SEA	INDIAN OCEAN
ALBATROSS IV				*			
ALPHA HELIX	*	*					
ATLANTIS II	*	*					
BLUE FIN				*			
CALANUS				*			
CAPE HATTERAS				*			
CAPE HENLOPEN				*			
CAYUSE							
CHAPMAN				*			
CLIFFORD A. BARNES		*					
COLUMBUS ISELIN				*			
DAVID STARR JORDAN		*					
DAVIDSON		*					
DELAWARE II				*			
DISCOVERER							
EDWIN LINK				*			
ENDEAVOR				*			
ERLINE				*			
FAIRWEATHER		*					
FERREL				*			
FRED H. MOORE	*						*
GYRE				*			
HECK				*			
JOHN N. COBB		*					
KILA		*					
KNORR				*	*		
LINWOOD HOLTON				*			
LONGHORN				*			
MCARTHUR		*					
MELVILLE		*			*		
MILLER FREEMAN		*					
MOANA WAVE			*				
MT. MITCHELL							
MURRE II							
NEW HORIZON		*					
OCEANUS				*			
OREGON II				*			
OSPREY		*					
PEIRCE							
PETER W. ANDERSON							
POINT SUR		*		*			
POLAR DUKE			*				
RAINIER	*	*					
RESEARCHER		*	*	*			
RIDGELY WARFIELD				*			
ROBERT D. CONRAD				*	*		
ROBERT G. SPROUL		*					
RUDE				*			
SEA DIVER				*			
SEWARD JOHNSON				*			
SURVEYOR							
THOMAS G. THOMPSON	*	*					
THOMAS WASHINGTON		*					
TOWNSEND CROMWELL		*					
USCGC GLACIER							
USCGC NORTHWIND							
USCGC POLAR SEA	*	*					
USCGC POLAR STAR							
USCGC WESTWIND				*			
WECOMA		*					
WESTWARD				*			
WHITING							

OCTOBER - DECEMBER 1987
AREAS OF OPERATION

	NO.WEST PACIFIC	NO.EAST PACIFIC	SOUTH PACIFIC	NORTH ATLANT.	SOUTH ATLANT.	MEDITER. SEA	INDIAN OCEAN
ALBATROSS IV							
ALPHA HELIX	*	*					
ATLANTIS II		*					
BLUE FIN				*			
CALANUS				*			
CAPE HATTERAS				*			
CAPE HENLOPEN				*			
CAYUSE							
CHAPMAN							
CLIFFORD A. BARNES		*					
COLUMBUS ISELIN				*			
DAVID STARR JORDAN							
DAVIDSON							
DELAWARE II							
DISCOVERER							
EDWIN LINK				*			
ENDEAVOR				*			
ERLINE				*			
FAIRWEATHER							
FERREL							
FRED H. MOORE	*	*					*
GYRE				*			
HECK							
JOHN N. COBB							
KILA		*					
KNORR				*	*		
LINWOOD HOLTON				*			
LONGHORN				*			
MCARTHUR							
MELVILLE		*	*				
MILLER FREEMAN							
MOANA WAVE		*	*				
MT. MITCHELL							
MURRE II							
NEW HORIZON		*					
OCEANUS				*			
OREGON II							
OSPREY		*					
PEIRCE							
PETER W. ANDERSON				*			
POINT SUR		*					
POLAR DUKE			*				
RAINIER							
RESEARCHER							
RIDGELY WARFIELD				*			
ROBERT D. CONRAD		*		*			
ROBERT G. SPROUL		*					
RUDE							
SEA DIVER				*			
SEWARD JOHNSON				*			
SURVEYOR							
THOMAS G. THOMPSON		*					
THOMAS WASHINGTON		*	*				
TOWNSEND CROMWELL							
USCGC GLACIER							
USCGC NORTHWIND				*			
USCGC POLAR SEA		*					
USCGC POLAR STAR		*	*				
USCGC WESTWIND		*	*	*			
WECOMA		*					
WESTWARD				*			
WHITING							

STANDARD NAVY OCEAN AREA AND REGION INDEX LIMITS


JANUARY 1978
CHARTS BASED ON MERCATOR PROJECTION NOT VALID NORTH OF 81° N
AR6
AR7
AR8
AR9
AR1
AR2
AR3
AR4
AR5
AR6
NP2
NP3
AR10
AR11
NA1
NA2
NA3
NP1
NP2
NP5
NP6
NA4A
NA4
NA5
NASA
NP4
NP5
NP8
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NA6
NA7
NA8
NP 7A
NP7
NP8
NP11
NP12
NP13
NA9
NA10
NA11
IN1
IN2
NP10
NP11
SP1
SP2
SP3
SP3A
SA1
SA2
IN3
IN4
IN5
SP1
SP4
SP5
SP6
SP6A
SA 3A
SA3
SA4
IN6
IN7
IN8
SP4
SP7
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SP9
SP9A
SASA
SA5
SA6
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IN11
SP7
AN 6
AN7
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AN10
CHARTS BASED ON MERCATOR PROJECTION NOT VALID SOUTH OF 81° S

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**********************************************************

              ALPHA HELIX
    ------------------------------------

     POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC:                          MS E R "DOLLY" DIETER
POC OFFICE:                   ASST DIR MARINE OPS & SHORE FAC.
POC ORGANIZATION:             INSTITUTE OF MARINE SCIENCE
POC ADDRESS:                  UNIVERSITY OF ALASKA BOX 730
POC CITY/STATE:               SEWARD AK 99664
FTS PREFIX:                   907
COMMERCIAL AREA CODE:         907
PHONE:                        224-5261

    ------------------------------------

          ADMINISTRATIVE DETAILS

COMMON SHIP NAME:             HELIX
DESIGNATOR:                   RV
CLASS:                        COASTAL
CALL SIGN (INTERNATIONAL):    WSD7078
FLEET:                        UNOLS
SHIP TYPE:                    OCEAN RESEARCH-GENERAL
SHIP OWNER:                   NATIONAL SCIENCE FOUNDATION
CERTIFICATION AUTHORITY:      AMERICAN BUREAU OF SHIPPING
FLAG REGISTRY:                USA
HOME PORT:                    SEWARD AK
TECHNICAL SPONSOR:            UNIV. OF ALASKA
OPERATIONS CONTROL:           UNIV. OF ALASKA
CONTRACTUAL INFORMATION:      NONE
OPERATING COST/DAY:           7.0/86                   THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT:         15
NUMBER OFFICERS:                3
NUMBER IN CREW:                   5
MAX SEA STATE:                 6 BEAUFORT SCALE
ENDURANCE:                     30 DAY(S)
LIMITING FACTOR:              FUEL-H2O-REFR STORES
BUILDER:                      J M MARTINAC COMPANY
WHERE BUILT:                  TACOMA WA USA
INITIAL COST:                 1.3/65   MILLION $'S IN YEAR
DUE DATE:                     '00
KEEL DATE:                    '64
LAUNCH DATE:                  '65
DELIVERY DATE:                '66
COMMISSION DATE:              '66
CONVERSION DATE:              '82
LAST OVERHAUL:                '86
MAINTENANCE CYCLE:            2.0 YEARS
END OF LIFE:                  1991
UPDATE OF INFORMATION:        07 JAN 87

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       SHIP DIMENSIONS

LENGTH:              132.8 FEET
MAX BEAM:            31.0 FEET
HEIGHT:               58.0 FEET
GROSS TONNAGE:         294
DISPLACEMENT:          600 TONS
DRAUGHT:             13.8 FEET
CRUISE SPEED:        10.0 KNOTS
RANGE:               10000 NAUTICAL MILES
MAX SPEED:           11.0 KNOTS
MIN SPEED:            1.0 KNOTS

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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:	DIESEL GEARED
AUXILIARY PROPULSION:	BOW THRUSTER
NUMBER OF SHAFTS:	1
BOW THRUSTER:	ELLIOTT WHITE GILL 360
ACTIVE RUDDER:	N
DYNAMIC POSITIONING:	N
ANTI-ROLL:	N
STABILIZER:	N
DEEP ANCHOR:	NONE FEET
BERTHING VAN DIMENSIONS:	NO
INSTRUMENT VAN DIMENSIONS:	NO
WET-LAB:	Y
DRY-LAB:	Y
AMMUNITION STORAGE:	N
HELO SUPPORT:	N
METEOROLOGICAL OBSERVATIONS:	SURFACE
UTILITY BOATS:	
1. 13 FOOT BOSTON WHALER	
2. 17 FOOT BOSTON WHALER	
A, U, OR L FRAMES	
MAX HOIST CAPACITY:	3800 POUNDS
NUMBER OF FRAMES:	1
CRANES OR BOOMS	
MAX HOIST CAPACITY:	2800 POUNDS
NUMBER OF CRANES:	1
WINCHES:	
01. MAJOR TYPE/USE:	HYDROGRAPHIC
SECONDARY TYPE/USE:	UTILITY
SLIP-RINGS:	6
WIRE TYPE:	CONDUCTOR CABLE
WIRE LENGTH:	6000 FEET
WIRE DIAMETER:	0.187 INCHES
02. MAJOR TYPE/USE:	DEEP SEA
SECONDARY TYPE/USE:	HYDROGRAPHIC
SLIP-RINGS:	6
WIRE TYPE:	CONDUCTOR CABLE
WIRE LENGTH:	26240 FEET
WIRE DIAMETER:	0.438 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS:	HP 85, IBM-AT
FACSIMILE:	Y
ELECTROMAGNETIC LOG:	N
INERTIAL NAVIGATION:	N
RADAR (SURFACE SCAN):	Y
LORAN A:	N
LORAN C:	Y
OMEGA:	N
SATELLITE NAVIGATION:	Y
RADIO TELETYPE COMMUNICATION:	N
SINGLE SIDE BAND:	Y
VHF COMMUNICATIONS:	Y
STABLE TABLE:	N
NARROW BEAM:	Y
SEISMIC PROFILING:	N
SIDE SCAN:	N
SOUNDING SYSTEM (SHALLOW):	ROSS 800B/ROSS 200
SOUNDING SYSTEM (DEEP):	EDO 248E

FUEL DETAILS

FUEL CAPACITY:	32000 GALLONS
FUEL TYPE:	DIESEL #2
FUEL CONSUMPTION RATES:	
AT NORMAL CRUISING SPEED:	750 GAL/24-HRS

DURING AVERAGE OPERATIONS: 520 GAL/24-HRS
DURING INPORT OPERATIONS: 100 GAL/24-HRS

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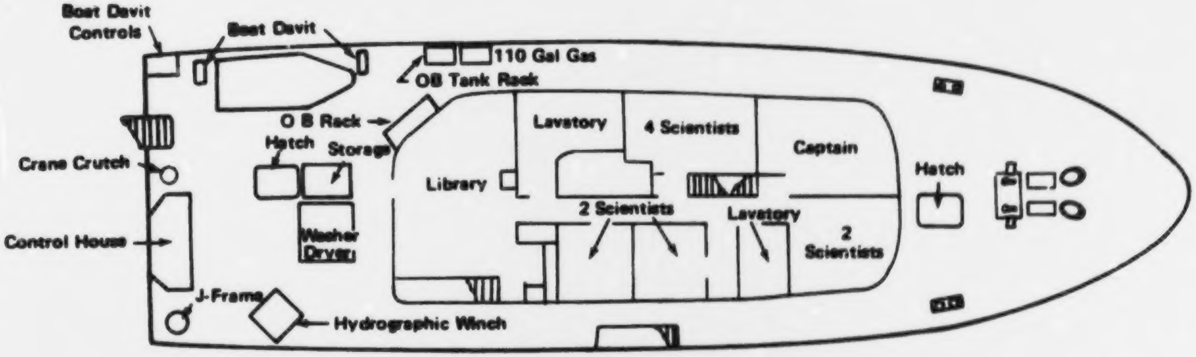
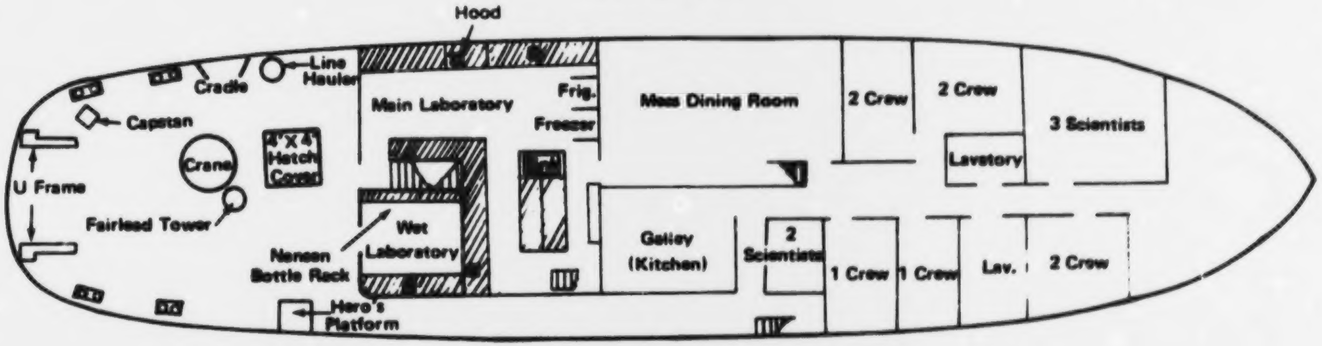
R/V ALPHA HELIX

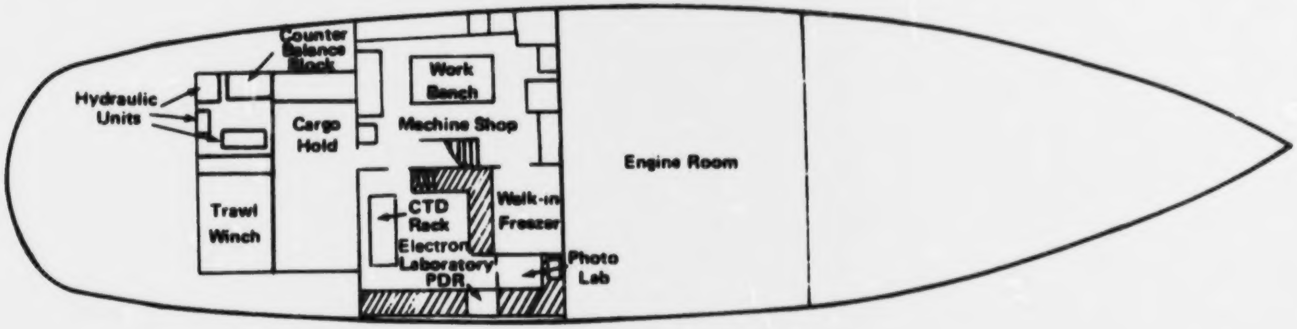
FUNCTIONAL ARRANGEMENT OF R/V *ALPHA HELIX*


Boat Davit Controls
Boat Davit
110 Gal Gas
OB Tank Rack
O B Rack
Hatch
Storage
Crane Crutch
Control House
Washer Dryer
J-Frame
Hydrographic Winch
Library
Lavatory
4 Scientists
Captain
2 Scientists
Lavatory
2 Scientists
Hatch

UPPER DECK


Hood
Line Hauler
Cradle
Capstan
Main Laboratory
Frig. Freezer
Mess Dining Room
2 Crew
2 Crew
3 Scientists
Lavatory
4'X4' Hatch Cover
Crane
U Frame
Fairlead Tower
Wet Laboratory
Nansen Bottle Rack
Hero's Platform
Galley (Kitchen)
2 Scientists
1 Crew
1 Crew
Lav.
2 Crew

MAIN DECK


Counter Balance Block
Hydraulic Units
Cargo Hold
Work Bench
Machine Shop
Trawl Winch
CTD Rack
Electron Laboratory
PDR
Walk-in Freezer
Photo Lab
Engine Room

LOWER DECK

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                   ALPHA HELIX                LAST CHANGED 21 JAN 87

                  OPS SCHEDULE FOR PERIOD
                  01 JAN 87 THRU 31 DEC 87
          ...........................................
OCEANOGRAPHIC RESEARCH          ROYER                  NSF

DEP: 17 FEB 87 SEWARD             GARS                                (F)
ARR: 03 MAR 87 SEWARD             GULF OF ALASKA                    15 DAY(S)
AREA INDEX: NP6
          ...........................................
OCEANOGRAPHIC RESEARCH          COONEY                 ALASKA

DEP: 24 MAR 87 SEWARD
ARR: 25 MAR 87 SEWARD             RESURRECTION  BAY                  2 DAY(S)
AREA INDEX: NP6
          ...........................................
OCEANOGRAPHIC RESEARCH          ALEXANDER              NSF

DEP: 21 APR 87 SEWARD             GARS
ARR: 11 MAY 87 DUTCH HARBOR       BERING ICE EDGE                   21 DAY(S)
AREA INDEX: NP6    NP5    NP6
          ...........................................
OCEANOGRAPHIC RESEARCH          ROYER                  NSF

DEP: 12 MAY 87 DUTCH HARBOR       GARS
ARR: 26 MAY 87 SEWARD             GULF OF ALASKA                    15 DAY(S)
AREA INDEX: NP6    NP5
          ...........................................
OCEANOGRAPHIC RESEARCH          HIGHSMITH              NSF

DEP: 07 JUN 87 SEWARD
ARR: 18 JUN 87 NOME               ST. LAWRENCE ISLAND               12 DAY(S)
AREA INDEX: NP5    NP6    NP2
          ...........................................
OCEANOGRAPHIC RESEARCH          DUGGINS/HARBISON       NSF

DEP: 19 JUN 87 NOME               CENTRAL ALEUTIANS
ARR: 09 JUL 87 DUTCH HARBOR       BERING SEA                        21 DAY(S)
AREA INDEX: NP6    NP5
          ...........................................
OCEANOGRAPHIC RESEARCH          HIGHSMITH              NSF

DEP: 10 JUL 87 DUTCH HARBOR
ARR: 19 JUL 87 NOME               BERING SEA                        10 DAY(S)
AREA INDEX: NP5    NP6    NP2
          ...........................................
OCEANOGRAPHIC RESEARCH          HUNT                   NSF

DEP: 20 JUL 87 NOME
ARR: 18 AUG 87 NOME               PRIBILOF ISLAND                   30 DAY(S)
AREA INDEX: NP2
          ...........................................
OCEANOGRAPHIC RESEARCH          HIGHSMITH              NSF

DEP: 19 AUG 87 NOME
ARR: 31 AUG 87 SEWARD             ST. LAWRENCE ISLAND               13 DAY(S)
AREA INDEX: NP2    NP6    NP5
          ...........................................
OCEANOGRAPHIC RESEARCH          ROYER                  NSF

DEP: 08 SEP 87 SEWARD             GARS                                (F)
ARR: 22 SEP 87 DUTCH HARBOR       GULF OF ALASKA                    15 DAY(S)
AREA INDEX: NP6    NP5
          ...........................................
OCEANOGRAPHIC RESEARCH          REEBURGH/HENRICHS      NSF
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DEP: 23 SEP 87 DUTCH HARBOR
ARR: 14 OCT 87 DUTCH HARBOR        SKAN BAY                         22 DAY(S)
AREA INDEX: NP5   NP6
       ........................................
OCEANOGRAPHIC RESEARCH           MCROY                  NSF

DEP: 15 OCT 87 DUTCH HARBOR        ISHTAR
ARR: 28 OCT 87 NOME                NORTH BERING SEA                 14 DAY(S)
AREA INDEX: NP5   NP6   NP2
       ........................................
OCEANOGRAPHIC RESEARCH           HIGHSMITH              NSF

DEP: 29 OCT 87 NOME
ARR: 09 NOV 87 SEWARD              ST. LAWRENCE ISLAND              12 DAY(S)
AREA INDEX: NP2   NP6   NP5
       ........................................
OCEANOGRAPHIC RESEARCH           ROYER                  NSF

DEP: 30 NOV 87 SEWARD              GARS                              (F)
ARR: 14 DEC 87 SEWARD              GULF OF ALASKA                   15 DAY(S)
AREA INDEX: NP6
       ........................................
OCEANOGRAPHIC RESEARCH           JOHNSON                NSF

DEP: 16 DEC 87 SEWARD AK
ARR: 22 DEC 87 SEWARD AK           GULF OF ALASKA                    7 DAY(S)
AREA INDEX: NP6
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              CAPE HENLOPEN
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     POINT OF CONTACT INFORMATION (CHARACTERISTICS)
 POC:                        MR WADSWORTH OWEN
 POC OFFICE:                 DIRECTOR OF FACILITIES & SERVICE
 POC ORGANIZATION:           UNIVERSITY OF DELAWARE
 POC ADDRESS:                700 PILOTTOWN ROAD
 POC CITY/STATE:             LEWES DE  19958
 FTS PREFIX:                 302
 COMMERCIAL AREA CODE:       302
 PHONE:                      645-4320
     -------------------------------------

           ADMINISTRATIVE DETAILS
 DESIGNATOR:                      RV
 CLASS:                           CREW BOAT HULL
 CALL SIGN (INTERNATIONAL):
 FLEET:                           UNCLS
 SHIP TYPE:                       OCEAN RESEARCH-OFFSHORE
 SHIP OWNER:                      UNIVERSITY OF DELAWARE
 CERTIFICATION AUTHORITY:         UNINSPECTED, ABS A-1
 FLAG REGISTRY:                   USA
 HOME PORT:                       LEWES DE
 TECHNICAL SPONSOR:               UNIV. OF DELAWARE
 OPERATIONS CONTROL:              UNIVERSITY OF DELAWARE
 CONTRACTUAL INFORMATION:         AVAILABLE FOR OUTSIDE USE. CALL POINT-OF-CONT-
                                  ACT
 OPERATING COST/DAY:              5.0/87                     THOUSAND $'S IN YR
 SCIENTIFIC COMPLEMENT:            12
 NUMBER OFFICERS:                  2
 NUMBER IN CREW:                     5
 MAX SEA STATE:                    5 BEAUFORT SCALE
 ENDURANCE:                        13 DAY(S)
 LIMITING FACTOR:                 FUEL
 BUILDER:                         SWIFTSHIPS
 WHERE BUILT:                     MORGAN CITY, LA USA
 INITIAL COST:                    1.2/75   MILLION $'S IN YEAR
 DUE DATE:                        '00
 KEEL DATE:                       '74
 LAUNCH DATE:                     '75
 DELIVERY DATE:                   '76
 COMMISSION DATE:                 '76
 CONVERSION DATE:                 '00
 LAST OVERHAUL:                   '00
 MAINTENANCE CYCLE:               1.5 YEARS
 END OF LIFE:                     2001
 UPDATE OF INFORMATION:           07 JAN 87
     -------------------------------------

       SHIP DIMENSIONS
 LENGTH:               120.0 FEET
 MAX BEAM:             23.3 FEET
 HEIGHT:                48.0 FEET
 GROSS TONNAGE:          228
 DISPLACEMENT:           165 TONS
 DRAUGHT:               9.3 FEET
 CRUISE SPEED:         12.5 KNOTS
 RANGE:                 2368 NAUTICAL MILES
 MAX SPEED:            18.0 KNOTS
 MIN SPEED:             0.5 KNOTS
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ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                  DIESEL GEARED
AUXILIARY PROPULSION:             NO
NUMBER OF SHAFTS:                 2
BOW THRUSTER:                     NO
ACTIVE RUDDER:                    N
DYNAMIC POSITIONING:              N
ANTI-ROLL:                        N
STABILIZER:                       Y
DEEP ANCHOR:                        250 FEET
BERTHING VAN DIMENSIONS:          NO
INSTRUMENT VAN DIMENSIONS:        8X8X16
WET-LAB:                          Y
DRY-LAB:                          Y
AMMUNITION STORAGE:               N
HELO SUPPORT:                     N
METEOROLOGICAL OBSERVATIONS:      Y
UTILITY BOATS:
    1. 16 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:             12000 POUNDS
  NUMBER OF FRAMES:               4
CRANES OR BOOMS
  MAX HOIST CAPACITY:             22050 POUNDS
  NUMBER OF CRANES:               1
WINCHES:
    01. MAJOR TYPE/USE:           OCEANOGRAPHIC
        SECONDARY TYPE/USE:       HYDROGRAPHIC
        SLIP-RINGS:               6
        WIRE TYPE:                CONDUCTOR CABLE
        WIRE LENGTH:              10500 FEET
        WIRE DIAMETER:            0.219 INCHES
        SECONDARY WIRE TYPE:      CONDUCTOR CABLE
        SECONDARY WIRE LEN:       10500 FEET
        SECONDARY WIRE DIAM:      0.219 INCHES
    02. MAJOR TYPE/USE:           TRAWL
        SECONDARY TYPE/USE:       CORING
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:              10500 FEET
        WIRE DIAMETER:            0.437 INCHES
        SECONDARY WIRE TYPE:      WIRE ROPE
        SECONDARY WIRE LEN:        8200 FEET
        SECONDARY WIRE DIAM:      0.500 INCHES
    03. MAJOR TYPE/USE:           ANCHOR
        SECONDARY TYPE/USE:
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:               1020 FEET
        WIRE DIAMETER:            0.750 INCHES
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ELECTRONIC EQUIPMENT

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COMPUTERS:                         TK-4052,HP-85,SRD-CC
FACSIMILE:                         Y
ELECTROMAGNETIC LOG:               N
INERTIAL NAVIGATION:               N
RADAR (SURFACE SCAN):              Y
LORAN A:                           N
LORAN C:                           Y
OMEGA:                             N
SATELLITE NAVIGATION:              N
RADIO TELETYPE COMMUNICATION:      N
SINGLE SIDE BAND:                  Y
VHF COMMUNICATIONS:                Y
STABLE TABLE:                      N
NARROW BEAM:                       N
SEISMIC PROFILING:                 Y
SIDE SCAN:                         N
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SOUNDING SYSTEM (SHALLOW):      KONEL/BENMAR
SOUNDING SYSTEM (DEEP):         KONEL

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      FUEL DETAILS

FUEL CAPACITY:                       9750 GALLONS
FUEL TYPE:                                DIESEL #2
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:        1200 GAL/24-HRS
    DURING AVERAGE OPERATIONS:        800 GAL/24-HRS
    DURING INPORT OPERATIONS:         100 GAL/24-HRS

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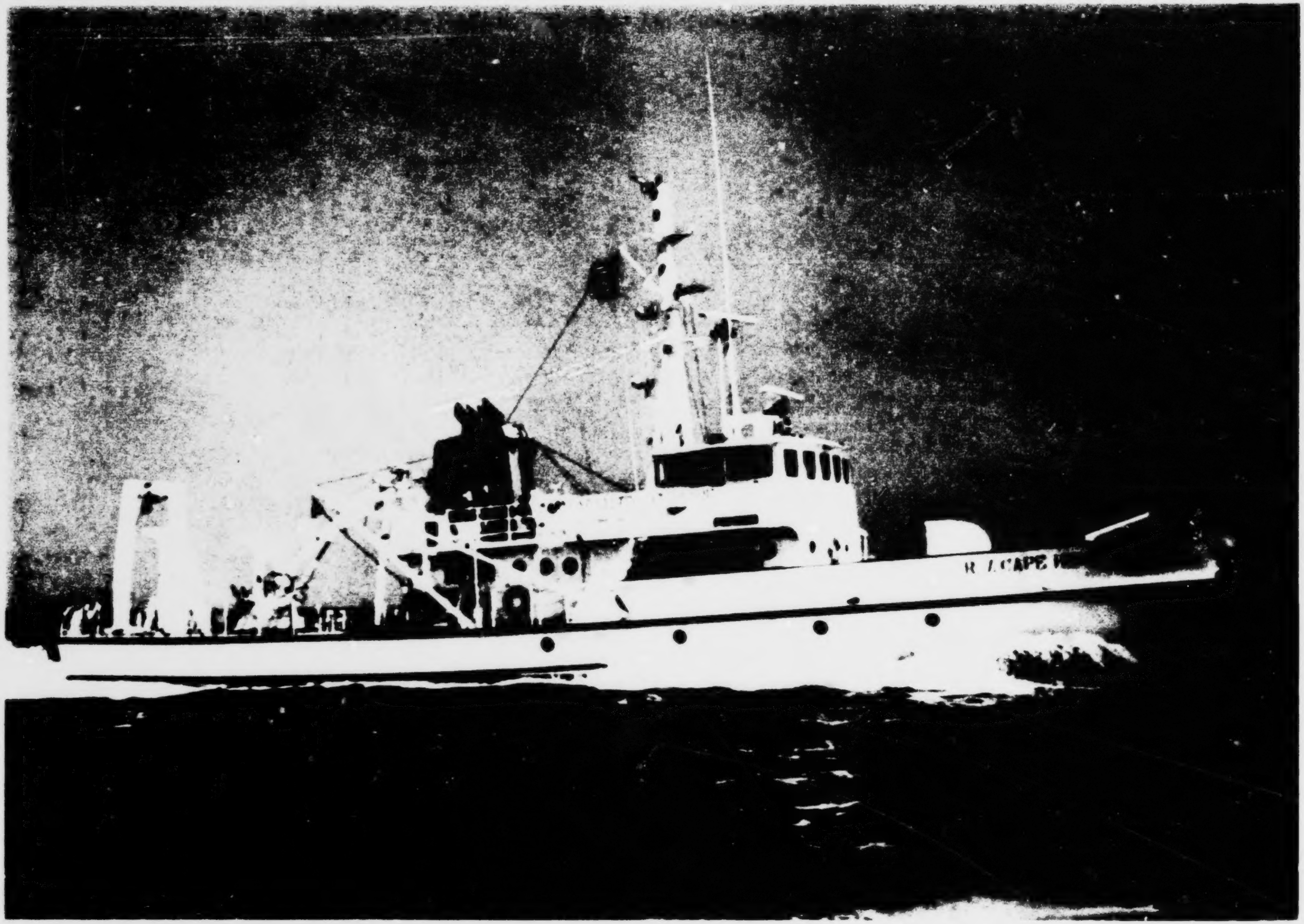
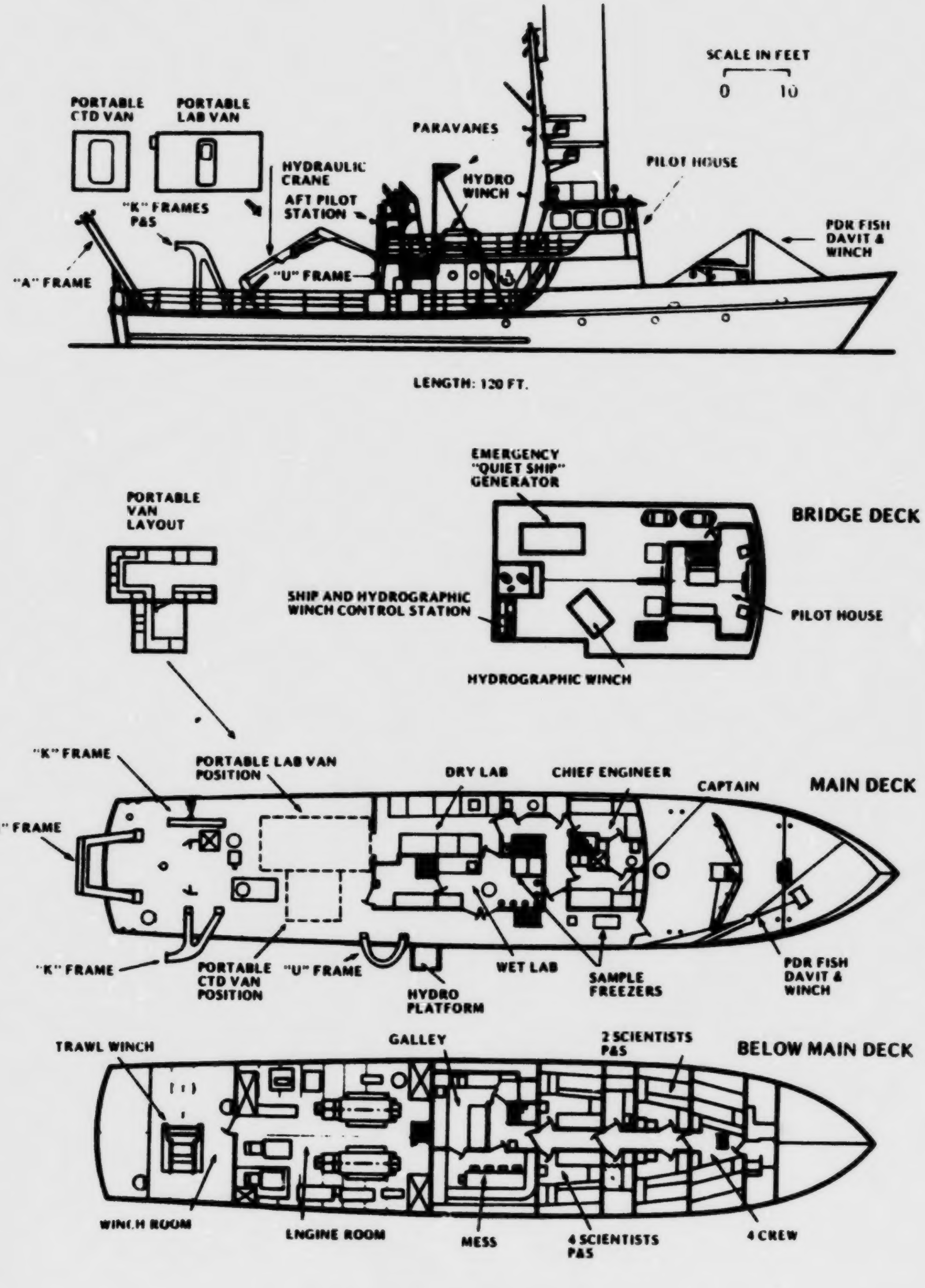


R/V CAPE HENLOPEN


SCALE IN FEET
0
10
PORTABLE CTD VAN
PORTABLE LAB VAN
PARAVANES
HYDRAULIC CRANE
HYDRO WINCH
PILOT HOUSE
"K" FRAMES P&S
AFT PILOT STATION
PDR FISH DAVIT & WINCH
"A" FRAME
"U" FRAME
LENGTH: 120 FT.
EMERGENCY "QUIET SHIP" GENERATOR
PORTABLE VAN LAYOUT
BRIDGE DECK
SHIP AND HYDROGRAPHIC WINCH CONTROL STATION
PILOT HOUSE
HYDROGRAPHIC WINCH
"K" FRAME
PORTABLE LAB VAN POSITION
DRY LAB
CHIEF ENGINEER
CAPTAIN
MAIN DECK
"A" FRAME
"K" FRAME
PORTABLE CTD VAN POSITION
"U" FRAME
HYDRO PLATFORM
WET LAB
SAMPLE FREEZERS
PDR FISH DAVIT & WINCH
TRAWL WINCH
GALLEY
2 SCIENTISTS P&S
BELOW MAIN DECK
WINCH ROOM
ENGINE ROOM
MESS
4 SCIENTISTS P&S
4 CREW

R/V CAPE HENLOPEN

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                    CAPE HENLOPEN             LAST CHANGED 16 JAN 87

                   OPS SCHEDULE FOR PERIOD
                   01 JAN 87 THRU 31 DEC 87
            ..........................................
OCEANOGRAPHIC RESEARCH         SHARP/PENNOCK         NSF

DEP: 06 JAN 87 LEWES                                                 (F)
ARR: 07 JAN 87 LEWES             CHESAPEAKE BAY                      2 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         PONGONIS              VIMS

DEP: 26 JAN 87 LEWES                                                 (P)
ARR: 03 FEB 87 LEWES             CHESAPEAKE BAY                      9 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         SHARP/PENNOCK         NSF

DEP: 17 FEB 87 LEWES                                                 (F)
ARR: 18 FEB 87 LEWES             CHESAPEAKE BAY                      2 DAY(S)
AREA INDEX: NA6

DEP: 02 MAR 87 LEWES                                                 (F)
ARR: 03 MAR 87 LEWES             CHESAPEAKE BAY                      2 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         GARVINE               NSF

DEP: 16 MAR 87 LEWES                                                 (F)
ARR: 18 MAR 87 LEWES             CHESAPEAKE BAY                      3 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         SHARP/PENNOCK         NSF

DEP: 22 MAR 87 LEWES                                                 (F)
ARR: 23 MAR 87 LEWES             CHESAPEAKE BAY                      2 DAY(S)
AREA INDEX: NA6

DEP: 01 APR 87 LEWES                                                 (F)
ARR: 02 APR 87 LEWES             CHESAPEAKE BAY                      2 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         CHURCH                NSF

DEP: 06 APR 87 LEWES                                                 (F)
ARR: 10 APR 87 LEWES             CHESAPEAKE BAY                      5 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         SHARP/PENNOCK         NSF

DEP: 15 APR 87 LEWES                                                 (F)
ARR: 16 APR 87 LEWES             CHESAPEAKE BAY                      2 DAY(S)
AREA INDEX: NA6

DEP: 28 APR 87 LEWES                                                 (F)
ARR: 30 APR 87 LEWES             CHESAPEAKE BAY                      3 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         CHRISTENSEN           NSF

DEP: 01 MAY 87 LEWES                                                 (P)
ARR: 11 MAY 87 LEWES             CHESAPEAKE BAY                     11 DAY(S)
AREA INDEX: NA6
            ..........................................
OCEANOGRAPHIC RESEARCH         SHARP/PENNOCK         NSF
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DEP: 13 MAY 87 LEWES                                                        (F)
ARR: 14 MAY 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6

DEP: 25 MAY 87 LEWES                                                        (F)
ARR: 26 MAY 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        GARVINE                   NSF

DEP: 01 JUN 87 LEWES                                                        (F)
ARR: 02 JUN 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        CHURCH                    NSF

DEP: 05 JUN 87 LEWES                                                        (F)
ARR: 09 JUN 87 LEWES            CHESAPEAKE BAY                           5 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        CHRISTENSEN               NSF

DEP: 11 JUN 87 LEWES                                                        (P)
ARR: 21 JUN 87 LEWES            CHESAPEAKE BAY                          11 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        SHARP/PENNOCK             NSF

DEP: 25 JUN 87 LEWES                                                        (F)
ARR: 26 JUN 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        SHOLKOVITZ                NSF

DEP: 03 JUL 87 LEWES                                                        (F)
ARR: 07 JUL 87 LEWES            CHESAPEAKE BAY                           5 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        HALL                      NSF

DEP: 10 JUL 87 LEWES                                                        (F)
ARR: 10 JUL 87 LEWES            CHESAPEAKE BAY                           1 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        SHARP/PENNOCK             NSF

DEP: 27 JUL 87 LEWES                                                        (F)
ARR: 28 JUL 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 LEWES                                                        (F)
ARR: 01 SEP 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        YAMAMOTO                  ONR

DEP: 09 SEP 87 LEWES                                                        (F)
ARR: 28 SEP 87 LEWES            CHESAPEAKE BAY                          20 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH        SHARP/PENNOCK             NSF

DEP: 30 SEP 87 LEWES                                                        (F)
ARR: 01 OCT 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6

DEP: 04 NOV 87 LEWES                                                        (F)
ARR: 05 NOV 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
AREA INDEX: NA6

DEP: 02 DEC 87 LEWES                                                        (F)
ARR: 03 DEC 87 LEWES            CHESAPEAKE BAY                           2 DAY(S)
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AREA INDEX: NA6
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                 CAPE HATTERAS
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                         MR ERIC B NELSON
  POC OFFICE:                  MARINE SUPERINTENDENT
  POC ORGANIZATION:            DUKE/UNC OCEANOGRAPHIC CONSORTIUM
  POC ADDRESS:                 DUKE UNIVERSITY MARINE LAB
  POC CITY/STATE:              BEAUFORT, NC 28516
  FTS PREFIX:                  919
  COMMERCIAL AREA CODE:        919
  PHONE:                       728-2111

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           ADMINISTRATIVE DETAILS

  SHORT NAME:                       HATTERAS
  DESIGNATOR:                       -
  CLASS:                            COASTAL ZONE R/V
  CALL SIGN (INTERNATIONAL):
  FLEET:                            UNOLS
  SHIP TYPE:                        OCEAN RESEARCH - COASTAL ZONE
  SHIP OWNER:                       NATIONAL SCIENCE FOUNDATION
  CERTIFICATION AUTHORITY:          -
  FLAG REGISTRY:                    USA
  HOME PORT:                        BEAUFORT NC USA
  TECHNICAL SPONSOR:                DUKE UNIV./UNIV. OF N.C. CONSORTIUM
  OPERATIONS CONTROL:               DUKE UNIV/U OF N.C. CONSORTIUM
  CONTRACTUAL INFORMATION:          NSF CHARTER PARTY AGREEMENT. EXPIRES 1991.
  OPERATING COST/DAY:               5.525/86                    THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:             12
  NUMBER OFFICERS:                   5
  NUMBER IN CREW:                      5
  MAX SEA STATE:                     6 BEAUFORT SCALE
  ENDURANCE:                         24 DAY(S)
  LIMITING FACTOR:                  FOOD STORES
  BUILDER:                          ATLANTIC MARINE INC
  WHERE BUILT:                      FORT GEORGE ISLAND FL
  INITIAL COST:                     3.1/81   MILLION $'S IN YEAR
  DUE DATE:                         '00
  KEEL DATE:                        15 JUN 80
  LAUNCH DATE:                      '00
  DELIVERY DATE:                    01 AUG 81
  COMMISSION DATE:                  '00
  CONVERSION DATE:                  '00
  LAST OVERHAUL:                    18 NOV 86
  MAINTENANCE CYCLE:                -   YEARS
  END OF LIFE:                      2006
  UPDATE OF INFORMATION:            07 JAN 87

     -----------------------------------------

        SHIP DIMENSIONS

  LENGTH:               135.0 FEET
  MAX BEAM:             32.0 FEET
  HEIGHT:                     FEET
  GROSS TONNAGE:          296
  DISPLACEMENT:           539 TONS
  DRAUGHT:               9.0 FEET
  CRUISE SPEED:         10.5 KNOTS
  RANGE:                 7000 NAUTICAL MILES
  MAX SPEED:            12.5 KNOTS
  MIN SPEED:             0.1 KNOTS
```

BEST COPY AVAILABLE

ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:              DIESEL GEARED
AUXILIARY PROPULSION:         -
NUMBER OF SHAFTS:             2
BOW THRUSTER:                 -
ACTIVE RUDDER:                -
DYNAMIC POSITIONING:          -
ANTI-ROLL:                    -
STABILIZER:                   -
DEEP ANCHOR:                    720 FEET
BERTHING VAN DIMENSIONS:      -
INSTRUMENT VAN DIMENSIONS:     5X6X9
WET-LAB:                      Y
DRY-LAB:                      Y
AMMUNITION STORAGE:           -
HELO SUPPORT:                 -
METEOROLOGICAL OBSERVATIONS:  -
UTILITY BOATS:
    1. 17 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:         20000 POUNDS
  NUMBER OF FRAMES:           3
CRANES OR BOOMS
  MAX HOIST CAPACITY:         12000 POUNDS
  NUMBER OF CRANES:           2
WINCHES:
    01. MAJOR TYPE/USE:       OCEANOGRAPHIC
        SECONDARY TYPE/USE:
        SLIP-RINGS:           N
        WIRE TYPE:            WIRE ROPE
        WIRE LENGTH:          33000 FEET
        WIRE DIAMETER:        0.500 INCHES
    02. MAJOR TYPE/USE:       HYDROGRAPHIC
        SECONDARY TYPE/USE:   OTHER
        SLIP-RINGS:           1
        WIRE TYPE:            WIRE ROPE
        WIRE LENGTH:          30000 FEET
        WIRE DIAMETER,        0.187 INCHES
    03. MAJOR TYPE/USE:       HYDROGRAPHIC
        SECONDARY TYPE/USE:
        SLIP-RINGS:           1
        WIRE TYPE:            CONDUCTOR CABLE
        WIRE LENGTH:          14000 FEET
        WIRE DIAMETER:        0.303 INCHES
```

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```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                     Y
FACSIMILE:                     Y
ELECTROMAGNETIC LOG:           -
INERTIAL NAVIGATION:           -
RADAR (SURFACE SCAN):          Y
LORAN A:                       -
LORAN C:                       Y
OMEGA:                         -
SATELLITE NAVIGATION:          Y
RADIO TELETYPE COMMUNICATION:  -
SINGLE SIDE BAND:              Y
VHF COMMUNICATIONS:            Y
STABLE TABLE:                  -
NARROW BEAM:                   Y
SEISMIC PROFILING:             Y
SIDE SCAN:                     -
SOUNDING SYSTEM (SHALLOW):     -
SOUNDING SYSTEM (DEEP):        RAYTHEON/EDO
```

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   ------------------------------------
```

FUEL DETAILS

```
  FUEL CAPACITY:                   28695 GALLONS
  FUEL TYPE:                             DIESEL #2
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:      800 GAL/24-HRS
      DURING AVERAGE OPERATIONS:     740 GAL/24-HRS
      DURING INPORT OPERATIONS:      200 GAL/24-HRS

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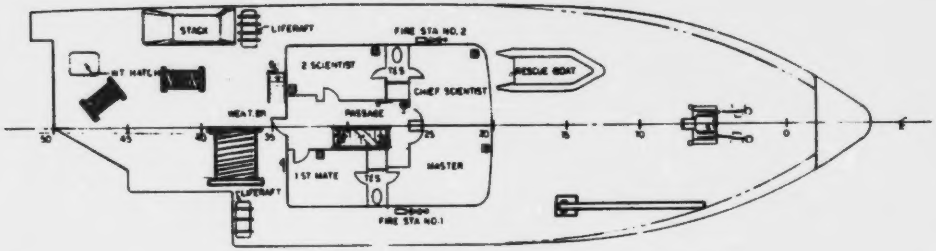
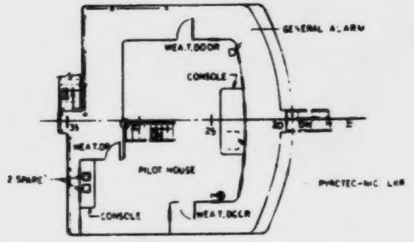
```

R/V CAPE HATTERAS

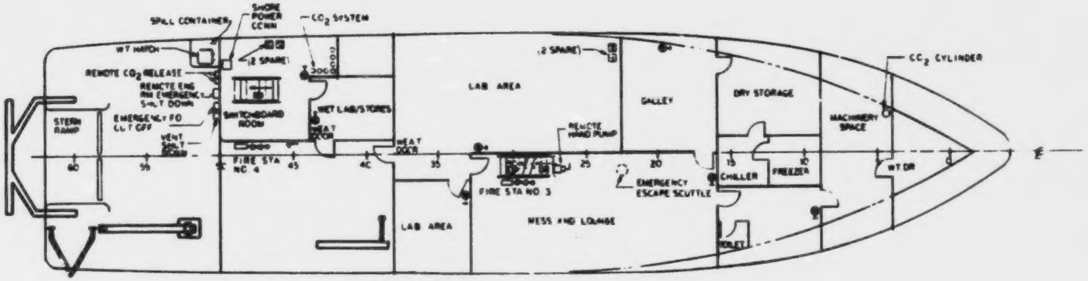
BEST COPY AVAILABLE


STACK
LIFERAFT
WT HATCH
FIRE STA NO. 2
2 SCIENTIST
T&S
CHIEF SCIENTIST
RESCUE BOAT
PASSAGE
WEAT. DR
1 ST MATE
MASTER
LIFERAFT
FIRE STA NO. 1

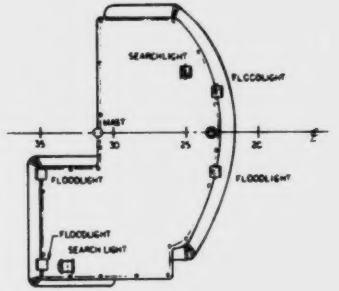
01-DECK


GENERAL ALARM
WEAT. DOOR
CONSOLE
WEAT. DR
PILOT HOUSE
2 SPARE
PYROTECHNIC LKR
CONSOLE
WEAT. DOOR

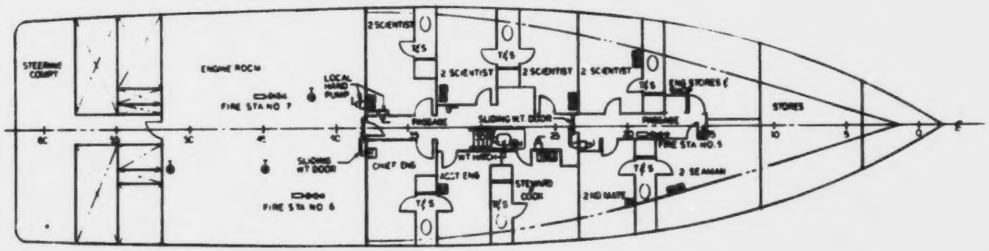
02-DECK


SPILL CONTAINER
SHORE POWER CONN
CO₂ SYSTEM
WT HATCH
(2 SPARE)
REMOTE CO₂ RELEASE
REMOTE ENG RM EMERGENCY SHUT DOWN
STERN RAMP
EMERGENCY FO CUT OFF
VENT SHUT DOWN
SWITCHBOARD ROOM
WET LAB/STORES
WEAT DOOR
FIRE STA NO 4
LAB AREA
(2 SPARE)
REMOTE HAND PUMP
FIRE STA NO 3
GALLEY
EMERGENCY ESCAPE SCUTTLE
DRY STORAGE
CHILLER
FREEZER
MACHINERY SPACE
CO₂ CYLINDER
WT DR
LAB AREA
MESS AND LOUNGE
TOILET

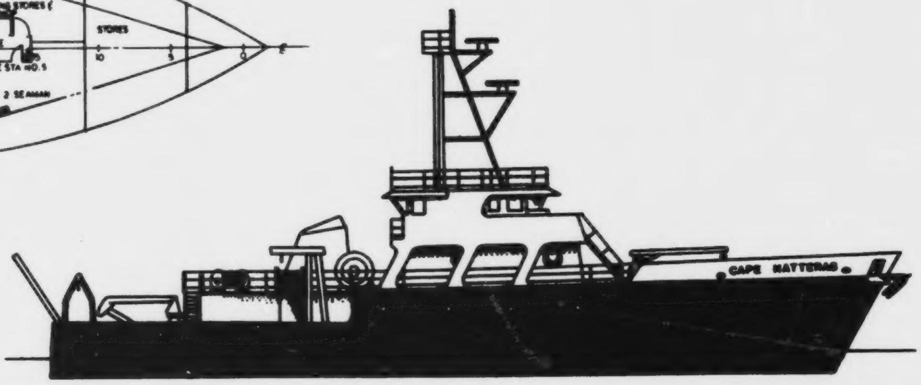
MAIN DECK


SEARCHLIGHT
FLOODLIGHT
MAST
FLOODLIGHT
FLOODLIGHT
FLOODLIGHT
SEARCH LIGHT

03-DECK


STEERING COMPT
ENGINE ROOM
FIRE STA NO 7
LOCAL HAND PUMP
SLIDING WT DOOR
FIRE STA NO 6
2 SCIENTIST
T&S
2 SCIENTIST
2 SCIENTIST
2 SCIENTIST
ENG STORES
PASSAGE
SLIDING WT DOOR
PASSAGE
FIRE STA NO 5
CHIEF ENG
ASST ENG
STEWARD COOK
2ND MATE
2 SEAMAN
STORES

LOWER DECK


CAPE HATTERAS

R/V CAPE HATTERAS

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               CAPE HATTERAS              LAST CHANGED 21 JAN 87

              OPS SCHEDULE FOR PERIOD
              01 JAN 87 THRU 31 DEC 87
             .........................................
OCEANOGRAPHIC RESEARCH         COLWELL              NSF

DEP: 07 JAN 87 BEAUFORT
ARR: 11 JAN 87 BEAUFORT         NORTH ATLANTIC                5 DAY(S)
AREA INDEX: NA6
             ..................................
OPEN

DEP: 11 JAN 87 BEAUFORT
ARR: 10 APR 87 BEAUFORT         OPEN                         90 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         RIVKIN               NSF

DEP: 25 APR 87 BEAUFORT                                     (F)
ARR: 14 MAY 87 BEAUFORT         CAROLINA SHELF               20 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         PAFFENHOFER          NSF

DEP: 18 MAY 87 BEAUFORT                                     (F)
ARR: 06 JUN 87 BEAUFORT         SHELF (NC TO GA)             20 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         GEORGE               STATE

DEP: 11 JUN 87 BEAUFORT                                      (F)
ARR: 17 JUN 87 BEAUFORT         CAROLINA SHELF                7 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         LAPOINTE             NSF

DEP: 22 JUN 87 BEAUFORT                                      (F)
ARR: 12 JUL 87 BERMUDA          NORTH ATLANTIC               21 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         RIVKIN               NSF

DEP: 17 JUL 87 BERMUDA                                       (F)
ARR: 04 AUG 87 LITTLE CREEK     NORTH ATLANTIC               19 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         CAMMEN/CHRISTENSEN   NSF

DEP: 10 AUG 87 LITTLE CREEK                                  (F)
ARR: 23 AUG 87 BEAUFORT         NORTH ATLANTIC               14 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         COLWELL              NSF

DEP: 01 SEP 87 BEAUFORT                                      (F)
ARR: 10 SEP 87 BEAUFORT         NORTH ATLANTIC               10 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         MARTENS              NSF

DEP: 21 SEP 87 BEAUFORT                                      (F)
ARR: 28 SEP 87 BEAUFORT         CAROLINA SHELF                8 DAY(S)
AREA INDEX: NA6
             .........................................
OCEANOGRAPHIC RESEARCH         PAFFENHOFER          DOE
```

```
DEP: 12 OCT 87 BEAUFORT                                                  (F)
ARR: 01 NOV 87 BEAUFORT            SHELF (NC TO GA)                      21 DAY(S)
AREA INDEX: NA6
     ............................................
OCEANOGRAPHIC RESEARCH           RIVKIN                  NSF

DEP: 06 NOV 87 BEAUFORT                                                  (F)
ARR: 15 NOV 87 BEAUFORT            CAROLINA SHELF                        10 DAY(S)
AREA INDEX: NA6
     ............................................
OUT OF SERVICE                                           DUKE

DEP: 16 NOV 87 BEAUFORT
ARR: 30 NOV 87 BEAUFORT            SHIPYARD, MAINTENANCE, REPAIR         15 DAY(S)
AREA INDEX: NA6
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               MOANA WAVE
     -------------------------------------

      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                    CAPT JAMES W. COSTE
  POC OFFICE:             MARINE SUPERINTENDENT
  POC ORGANIZATION:       UNIVERSITY MARINE CENTER
  POC ADDRESS:            #1 SAND ISLAND ROAD
  POC CITY/STATE:         HONOLULU HI   96819
  FTS PREFIX:             808
  COMMERCIAL AREA CODE:   808
  PHONE:                  847-2661

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           ADMINISTRATIVE DETAILS

  SHORT NAME:                  WAVE
  DESIGNATOR:                  AGOR 22
  CLASS:                       GYRE/AGOR 21
  CALL SIGN (INTERNATIONAL):   WZE3929
  FLEET:                       UNOLS
  SHIP TYPE:                   RESEARCH AND DEVELOPMENT
  SHIP OWNER:                  USN
  CERTIFICATION AUTHORITY:     -
  FLAG REGISTRY:               USA
  HOME PORT:                   HONOLULU HI
  TECHNICAL SPONSOR:           UNIV. OF HAWAII
  OPERATIONS CONTROL:          HAWAII INST. OF GEOPHYSICS
  CONTRACTUAL INFORMATION:     ONR CODE 611 LEASE TO EXPIRE 1 JAN 89
  OPERATING COST/DAY:          7.6/86                            THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:        19
  NUMBER OFFICERS:              4
  NUMBER IN CREW:                  9
  MAX SEA STATE:                5 BEAUFORT SCALE
  ENDURANCE:                    50 DAY(S)
  LIMITING FACTOR:             REFRIGERATED STORES
  BUILDER:                     HALTER MARINE SERVICES INC
  WHERE BUILT:                 NEW ORLEANS LA USA
  INITIAL COST:                3.9/73   MILLION $'S IN YEAR
  DUE DATE:                    '00
  KEEL DATE:                   '00
  LAUNCH DATE:                 18 JUN 73
  DELIVERY DATE:               '73
  COMMISSION DATE:             '00
  CONVERSION DATE:             '00
  LAST OVERHAUL:               '86
  MAINTENANCE CYCLE:           3.0 YEARS
  END OF LIFE:                 2003
  UPDATE OF INFORMATION:       08 JAN 87

     -------------------------------------

         SHIP DIMENSIONS

  LENGTH:            213.0 FEET
  MAX BEAM:          36.0 FEET
  HEIGHT:            -      FEET
  GROSS TONNAGE:       294
  DISPLACEMENT:       1853 TONS
  DRAUGHT:           15.0 FEET
  CRUISE SPEED:      10.0 KNOTS
  RANGE:             12000 NAUTICAL MILES
  MAX SPEED:         11.5 KNOTS
  MIN SPEED:          1.0 KNOTS
```

ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                 DIESEL GEARED
AUXILIARY PROPULSION:            NO
NUMBER OF SHAFTS:                2
BOW THRUSTER:                    ELECTRIC 150 HP
ACTIVE RUDDER:                   N
DYNAMIC POSITIONING:             N
ANTI-ROLL:                       N
STABILIZER:                      N
DEEP ANCHOR:                     NONE  FEET
BERTHING VAN DIMENSIONS:         24X8X8
INSTRUMENT VAN DIMENSIONS:       24X8X8
WET-LAB:                         Y
DRY-LAB:                         Y
AMMUNITION STORAGE:              N
HELO SUPPORT:                    N
METEOROLOGICAL OBSERVATIONS:     SURFACE
UTILITY BOATS:
    1. 12 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:            60000 POUNDS
  NUMBER OF FRAMES:              2
CRANES OR BOOMS
  MAX HOIST CAPACITY:             3000 POUNDS
  NUMBER OF CRANES:              2
WINCHES:
    01. MAJOR TYPE/USE:          HYDROGRAPHIC
        SECONDARY TYPE/USE:
        SLIP-RINGS:
        WIRE TYPE:               WIRE ROPE
        WIRE LENGTH:             30000 FEET
        WIRE DIAMETER:           0.187 INCHES
    02. MAJOR TYPE/USE:          STD
        SECONDARY TYPE/USE:
        SLIP-RINGS:
        WIRE TYPE:               CONDUCTOR CABLE
        WIRE LENGTH:             33000 FEET
        WIRE DIAMETER:           0.322 INCHES
    03. MAJOR TYPE/USE:          TRAWL
        SECONDARY TYPE/USE:      CORING
        SLIP-RINGS:
        WIRE TYPE:               WIRE ROPE
        WIRE LENGTH:             45000 FEET
        WIRE DIAMETER:           0.562 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                        NOVA 1220
FACSIMILE:                        Y
ELECTROMAGNETIC LOG:              Y
INERTIAL NAVIGATION:              N
RADAR (SURFACE SCAN):             Y
LORAN A:                          N
LORAN C:                          Y
OMEGA:                            Y
SATELLITE NAVIGATION:             Y
RADIO TELETYPE COMMUNICATION:     Y
SINGLE SIDE BAND:                 Y
VHF COMMUNICATIONS:               Y
STABLE TABLE:                     Y
NARROW BEAM:                      N
SEISMIC PROFILING:                Y
SIDE SCAN:                        Y
SOUNDING SYSTEM (SHALLOW):        ROSS
SOUNDING SYSTEM (DEEP):           EDO/RAYTHEON
```

FUEL DETAILS

```
    FUEL CAPACITY:                      125000 GALLONS
    FUEL TYPE:                                 DIESEL #2/JP-5
    FUEL CONSUMPTION RATES:
         AT NORMAL CRUISING SPEED:        2200 GAL/24-HRS
         DURING AVERAGE OPERATIONS:       1800 GAL/24-HRS
         DURING INPORT OPERATIONS:         300 GAL/24-HRS

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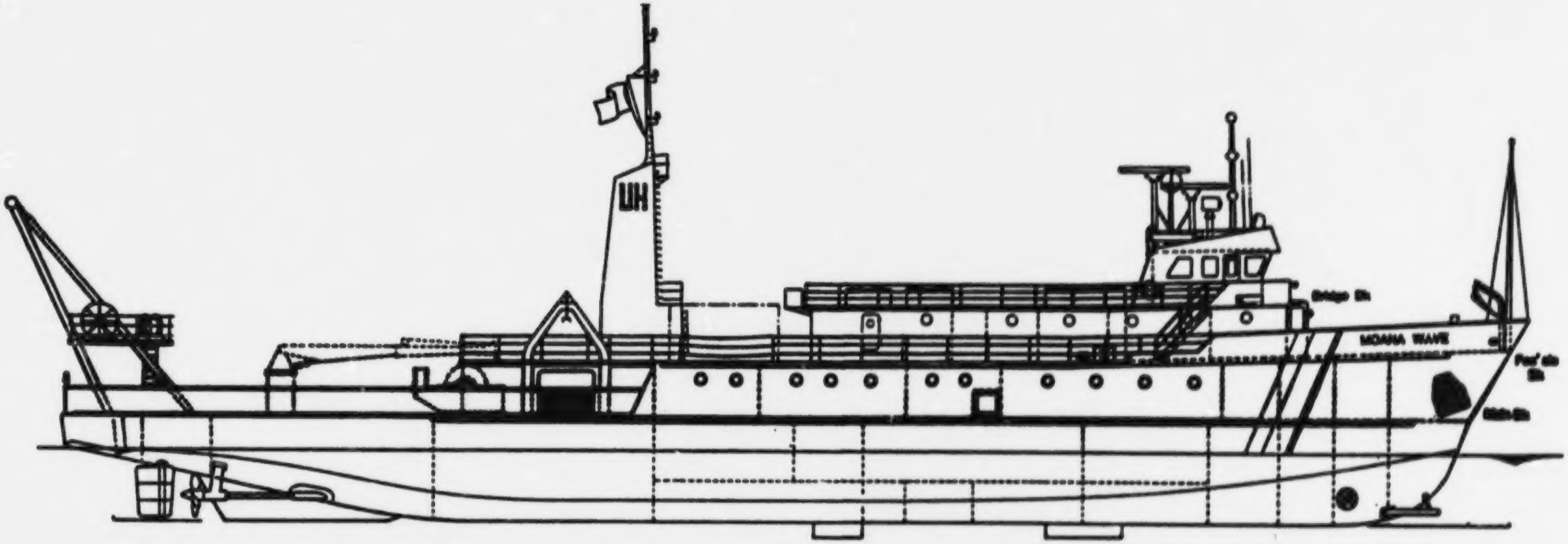
UH
MOANA WAVE
Bridge Dk
Fo'c'sle Dk
Main Dk

R/V MOANA WAVE

```
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                    MOANA WAVE                  LAST CHANGED 30 JAN 87

                   OPS SCHEDULE FOR PERIOD
                   01 JAN 87 THRU 31 DEC 87

          ..........................................
OCEANOGRAPHIC RESEARCH         HELSLEY               HIG

DEP: 19 DEC 86 HONOLULU                                          (F)
ARR: 03 JAN 87 SUVA              FIJI BASIN                       16 DAY(S)
AREA INDEX: NP12  SP1   SP2   NP11
          ..........................................
OCEANOGRAPHIC RESEARCH         KROENKE               AID

DEP: 12 JAN 87 SUVA                                              (F)
ARR: 03 FEB 87 PAGO PAGO         FIJI BASIN AID                   23 DAY(S)
AREA INDEX: SP1
          ..........................................
OCEANOGRAPHIC RESEARCH         COULBOURN             AID

DEP: 07 FEB 87 PAGO PAGO                                         (F)
ARR: 03 MAR 87 HONOLULU          COOK ISLANDS                     25 DAY(S)
AREA INDEX: SP1   NP12  NP11
          ..........................................
OCEANOGRAPHIC RESEARCH         BETZER                NSF

DEP: 19 MAR 87 HONOLULU                                          (F)
ARR: 17 APR 87 HONOLULU          ADIOS                            30 DAY(S)
AREA INDEX: NP12
          ..........................................
OCEANOGRAPHIC RESEARCH         MACDONALD             ONR

DEP: 24 APR 87 HONOLULU                                          (F)
ARR: 31 MAY 87 MANZANILLO        SEA MARC II                      38 DAY(S)
AREA INDEX: NP12  NP13
          ..........................................
OCEANOGRAPHIC RESEARCH         FORNARI               NSF

DEP: 05 JUN 87 MANZANILLO                                        (F)
ARR: 05 JUL 87 GUAYAQUIL         RISE CREST SEA MARC II           31 DAY(S)
AREA INDEX: NP13  SP3A
          ..........................................
OCEANOGRAPHIC RESEARCH         FARRINGTON            NSF

DEP: 09 JUL 87 GUAYAQUIL                                         (F)
ARR: 25 JUL 87 CALLAO            PERU MARGIN                      17 DAY(S)
AREA INDEX: SP3A
          ..........................................
OCEANOGRAPHIC RESEARCH         MOBERLY               NSF

DEP: 29 JUL 87 CALLAO                                            (F)
ARR: 30 AUG 87 GUAYAQUIL         PERU/CHILE                       33 DAY(S)
AREA INDEX: SP3A
          ..........................................
OCEANOGRAPHIC RESEARCH         MACDONALD             NSF

DEP: 04 SEP 87 GUAYAQUIL         SEA MARC II                     (F)
ARR: 12 OCT 87 EASTER ISLAND     EAST PACIFIC RISE                39 DAY(S)
AREA INDEX: SP3A  SP3
          ..........................................
OCEANOGRAPHIC RESEARCH         HEY                   NSF

DEP: 15 OCT 87 EASTER ISLAND     SEA MARC II                     (F)
ARR: 15 NOV 87 EASTER ISLAND     EASTER MICROPLATE                32 DAY(S)
AREA INDEX: SP3
          ..........................................
OCEANOGRAPHIC RESEARCH         SINTON                NSF
```

```
DEP: 18 NOV 87 EASTER ISLAND                                     (F)
ARR: 22 DEC 87 TAHITI             EAST PACIFIC RISE               35 DAY(S)
AREA INDEX: SP3   SP2
         . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
OPEN

DEP: 28 DEC 87 TAHITI
ARR: 31 DEC 87 TBD                OPEN                             4 DAY(S)
AREA INDEX: OPEN
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KILA

POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC: MR. J FRISBEE CAMPBELL
POC OFFICE: SCI COORDINATOR FOR MARINE OPER.
POC ORGANIZATION: HAWAII INSTITUTE OF GEOPHYSICS
POC ADDRESS: 2525 CORREA ROAD
POC CITY/STATE: HONOLULU, HI
COMMERCIAL AREA CODE: 808
PHONE: 948 8711

ADMINISTRATIVE DETAILS

DESIGNATOR: -
CLASS: RESEARCH
CALL SIGN (INTERNATIONAL): -
FLEET: -
SHIP TYPE: -
SHIP OWNER: HI. INSTITUTE OF GEOPHYSICS
CERTIFICATION AUTHORITY: -
FLAG REGISTRY: US
HOME PORT: HONOLULU, HAWAII
TECHNICAL SPONSOR: UNIVERSITY OF HAWAII
OPERATIONS CONTROL: HAWAII INSTITUTE OF GEOPHYSICS
CONTRACTUAL INFORMATION: -
OPERATING COST/DAY: -
SCIENTIFIC COMPLEMENT: 12
NUMBER OFFICERS: 2
NUMBER IN CREW: 3
MAX SEA STATE: - BEAUFORT SCALE
ENDURANCE: - DAY(S)
LIMITING FACTOR: -
BUILDER: BENDER WELDING & MACHINE CO., MOBILE
WHERE BUILT: MOBILE ALABAMA
INITIAL COST: -
DUE DATE: '00
KEEL DATE: '00
LAUNCH DATE: 77 2NO 00
DELIVERY DATE: '00
COMMISSION DATE: '00
CONVERSION DATE: 82 2NO 00
LAST OVERHAUL: '00
MAINTENANCE CYCLE: - YEARS
END OF LIFE: 0000
UPDATE OF INFORMATION: 01 JUL 86

SHIP DIMENSIONS

LENGTH: 104.0 FEET
MAX BEAM: 24.0 FEET
HEIGHT: - FEET
GROSS TONNAGE: 192
DISPLACEMENT: - TONS
DRAUGHT: 12.9 FEET
CRUISE SPEED: 8.0 KNOTS
RANGE: 5000 NAUTICAL MILES
MAX SPEED: 8.0 KNOTS
MIN SPEED: 2.0 KNOTS

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      ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:                2 343 DIESELS
AUXILIARY PROPULSION:           -
NUMBER OF SHAFTS:               0
BOW THRUSTER:                   -
ACTIVE RUDDER:                  -
DYNAMIC POSITIONING:            -
ANTI-ROLL:                      -
STABILIZER:                     -
DEEP ANCHOR:                    -     FEET
BERTHING VAN DIMENSIONS:        -
INSTRUMENT VAN DIMENSIONS:      -
WET-LAB:                        -
DRY-LAB:                        -
AMMUNITION STORAGE:             -
HELO SUPPORT:                   -
METEOROLOGICAL OBSERVATIONS:    -
UTILITY BOATS:                  -
A, U, OR L FRAMES
  MAX HOIST CAPACITY:           10    POUNDS
  NUMBER OF FRAMES:             1
CRANES OR BOOMS
  MAX HOIST CAPACITY:           3.5   POUNDS
  NUMBER OF CRANES:             1
WINCHES:

    -----------------------------------

      ELECTRONIC EQUIPMENT

COMPUTERS:                       -
FACSIMILE:                       -
ELECTROMAGNETIC LOG:             -
INERTIAL NAVIGATION:             -
RADAR (SURFACE SCAN):            -
LORAN A:                         -
LORAN C:                         -
OMEGA:                           Y
SATELLITE NAVIGATION:            Y
RADIO TELETYPE COMMUNICATION:    -
SINGLE SIDE BAND:                Y
VHF COMMUNICATIONS:              Y
STABLE TABLE:                    -
NARROW BEAM:                     -
SEISMIC PROFILING:               -
SIDE SCAN:                       -
SOUNDING SYSTEM (SHALLOW):       -
SOUNDING SYSTEM (DEEP):          -

    -----------------------------------

      FUEL DETAILS

FUEL CAPACITY:                        GALLONS
FUEL TYPE:                            -
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:         GAL/24-HRS
    DURING AVERAGE OPERATIONS:        GAL/24-HRS
    DURING INPORT OPERATIONS:         GAL/24-HRS

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                 KILA                         LAST CHANGED 30 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      .........................................
OCEANOGRAPHIC RESEARCH                                  UNIV. OF HAWAII

DEP: 01 JAN 87 HONOLULU HI        SCHEDULE NOT RECEIVED IN TIME TO PUBLISH
ARR: 31 DEC 87 HONOLULU HI        CONTACT POC FOR INFORMATION.   365 DAY(S)
AREA INDEX: NP12
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               RIDGELY WARFIELD
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                   MR BRUCE K CORNWALL
  POC OFFICE:            MARINE SUPERINTENDENT
  POC ORGANIZATION:      CHESAPEAKE BAY INSTITUTE
  POC ADDRESS:           JOHNS HOPKINS UNIVERSITY
  POC CITY/STATE:        SHADY SIDE MD 20764
  COMMERCIAL AREA CODE:  301
  PHONE:                 867-7550

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           ADMINISTRATIVE DETAILS

  COMMON SHIP NAME:            WARFIELD
  DESIGNATOR:                  RV
  CLASS:                       CATAMARAN
  CALL SIGN (INTERNATIONAL):   WYZ3360
  FLEET:                       UNOLS
  SHIP TYPE:                   OCEAN RESEARCH-GENERAL
  SHIP OWNER:                  JOHNS HOPKINS UNIVERSITY
  CERTIFICATION AUTHORITY:     -
  FLAG REGISTRY:               USA
  HOME PORT:                   ANNAPOLIS MD
  TECHNICAL SPONSOR:           JOHNS HOPKINS UNIVERSITY
  OPERATIONS CONTROL:          JOHNS HOPKINS UNIVERSITY
  CONTRACTUAL INFORMATION:     NONE
  OPERATING COST/DAY:          4.5/87                         THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:        10
  NUMBER OFFICERS:              4
  NUMBER IN CREW:                 7
  MAX SEA STATE:                4 BEAUFORT SCALE
  ENDURANCE:                    12 DAY(S)
  LIMITING FACTOR:             FUEL, CREW
  BUILDER:                     BETHLEHEM STEEL CORPORATION
  WHERE BUILT:                 BALTIMORE MD USA
  INITIAL COST:                1.25/67  MILLION $'S IN YEAR
  DUE DATE:                    '00
  KEEL DATE:                   '00
  LAUNCH DATE:                 '67
  DELIVERY DATE:               '67
  COMMISSION DATE:             '67
  CONVERSION DATE:             '00
  LAST OVERHAUL:               01 DEC 85
  MAINTENANCE CYCLE:           1.5 YEARS
  END OF LIFE:                 1992
  UPDATE OF INFORMATION:       07 JAN 87

     ------------------------------------

        SHIP DIMENSIONS

  LENGTH:             106.0 FEET
  MAX BEAM:           34.0 FEET
  HEIGHT:              46.0 FEET
  GROSS TONNAGE:         262
  DISPLACEMENT:          162 TONS
  DRAUGHT:             9.6 FEET
  CRUISE SPEED:       14.0 KNOTS
  RANGE:               1500 NAUTICAL MILES
  MAX SPEED:          14.0 KNOTS
  MIN SPEED:           2.0 KNOTS

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ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                      DIESEL GEARED
AUXILIARY PROPULSION:                 NO
NUMBER OF SHAFTS:                     2
BOW THRUSTER:                         NO
ACTIVE RUDDER:                        N
DYNAMIC POSITIONING:                  N
ANTI-ROLL:                            N
STABILIZER:                           N
DEEP ANCHOR:                          NONE  FEET
BERTHING VAN DIMENSIONS:              NO
INSTRUMENT VAN DIMENSIONS:            NO
WET-LAB:                              Y
DRY-LAB:                              Y
AMMUNITION STORAGE:                   N
HELO SUPPORT:                         N
METEOROLOGICAL OBSERVATIONS:          -
UTILITY BOATS:
    1. 17 FOOT BOSTON WHALER
A, U, OR L FRAMES
  MAX HOIST CAPACITY:                  3000 POUNDS
  NUMBER OF FRAMES:                   1
CRANES OR BOOMS
  MAX HOIST CAPACITY:                  3000 POUNDS
  NUMBER OF CRANES:                   1
WINCHES:
    01. MAJOR TYPE/USE:               TRAWL
        SECONDARY TYPE/USE:           CORING
        SLIP-RINGS:                   N
        WIRE TYPE:                    WIRE ROPE
        WIRE LENGTH:                   1000 FEET
        WIRE DIAMETER:                0.375 INCHES
        SECONDARY WIRE TYPE:          WIRE ROPE
        SECONDARY WIRE LEN:            1000 FEET
        SECONDARY WIRE DIAM:          0.375 INCHES
    02. MAJOR TYPE/USE:               HYDROGRAPHIC
        SECONDARY TYPE/USE:           UTILITY
        SLIP-RINGS:                   N
        WIRE TYPE:                    WIRE ROPE
        WIRE LENGTH:                   1000 FEET
        WIRE DIAMETER:                0.156 INCHES
    03. MAJOR TYPE/USE:               BATHYTHERMOGRAPHIC
        SECONDARY TYPE/USE:           UTILITY
        SLIP-RINGS:                   N
        WIRE TYPE:                    WIRE ROPE
        WIRE LENGTH:                    300 FEET
        WIRE DIAMETER:                0.094 INCHES
    04. MAJOR TYPE/USE:               TRAWL
        SECONDARY TYPE/USE:           CORING
        SLIP-RINGS:                   N
        WIRE TYPE:                    WIRE ROPE
        WIRE LENGTH:                   1000 FEET
        WIRE DIAMETER:                0.375 INCHES
    05. MAJOR TYPE/USE:               ANCHOR
        SECONDARY TYPE/USE:
        SLIP-RINGS:                   N
        WIRE TYPE:                    WIRE ROPE
        WIRE LENGTH:                   1200 FEET
        WIRE DIAMETER:                0.500 INCHES
    06. MAJOR TYPE/USE:               ANCHOR
        SECONDARY TYPE/USE:
        SLIP-RINGS:                   N
        WIRE TYPE:                    WIRE ROPE
        WIRE LENGTH:                   2000 FEET
        WIRE DIAMETER:                0.375 INCHES
    07. MAJOR TYPE/USE:               CTD
        SECONDARY TYPE/USE:
        SLIP-RINGS:                   Y
        WIRE TYPE:                    CONDUCTOR CABLE
        WIRE LENGTH:                   1000 FEET
        WIRE DIAMETER:                0.313 INCHES
    ------------------------------------

         ELECTRONIC EQUIPMENT

    COMPUTERS:                          NONE
    FACSIMILE:                          N
    ELECTROMAGNETIC LOG:                N
    INERTIAL NAVIGATION:                N
    RADAR (SURFACE SCAN):               Y
    LORAN A:                            N
    LORAN C:                            Y
    OMEGA:                              N
    SATELLITE NAVIGATION:               N
    RADIO TELETYPE COMMUNICATION:       N
    SINGLE SIDE BAND:                   Y
    VHF COMMUNICATIONS:                 Y
    STABLE TABLE:                       N
    NARROW BEAM:                        N
    SEISMIC PROFILING:                  N
    SIDE SCAN:                          N
    SOUNDING SYSTEM (SHALLOW):          RAYTHEON, INSPACE
    SOUNDING SYSTEM (DEEP):             INSPACE TECH

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         FUEL DETAILS

    FUEL CAPACITY:                       12000 GALLONS
    FUEL TYPE:                                 DIESEL #2
    FUEL CONSUMPTION RATES:
        AT NORMAL CRUISING SPEED:         1920 GAL/24-HRS
        DURING AVERAGE OPERATIONS:         500 GAL/24-HRS
        DURING INPORT OPERATIONS:           50 GAL/24-HRS

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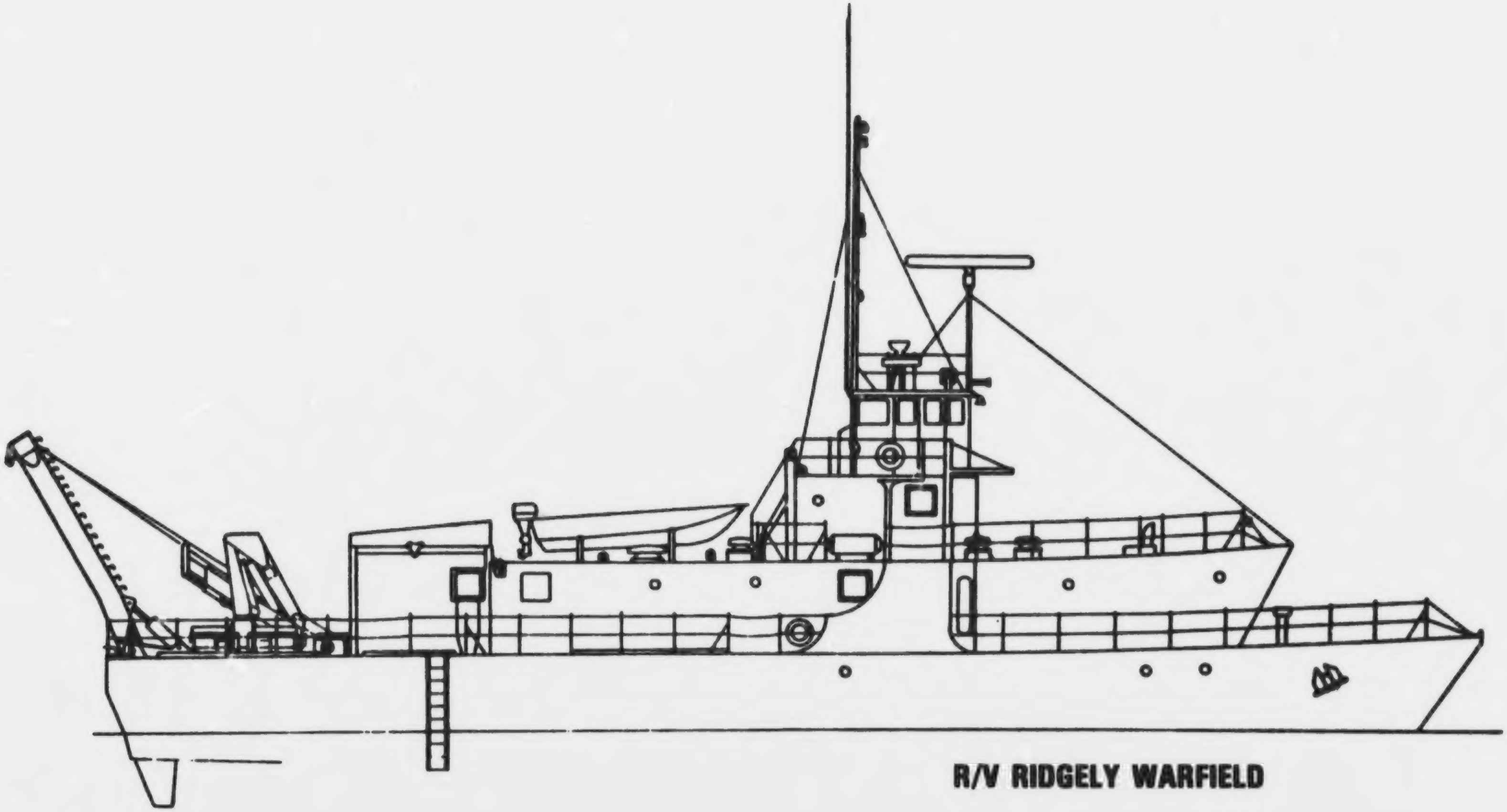
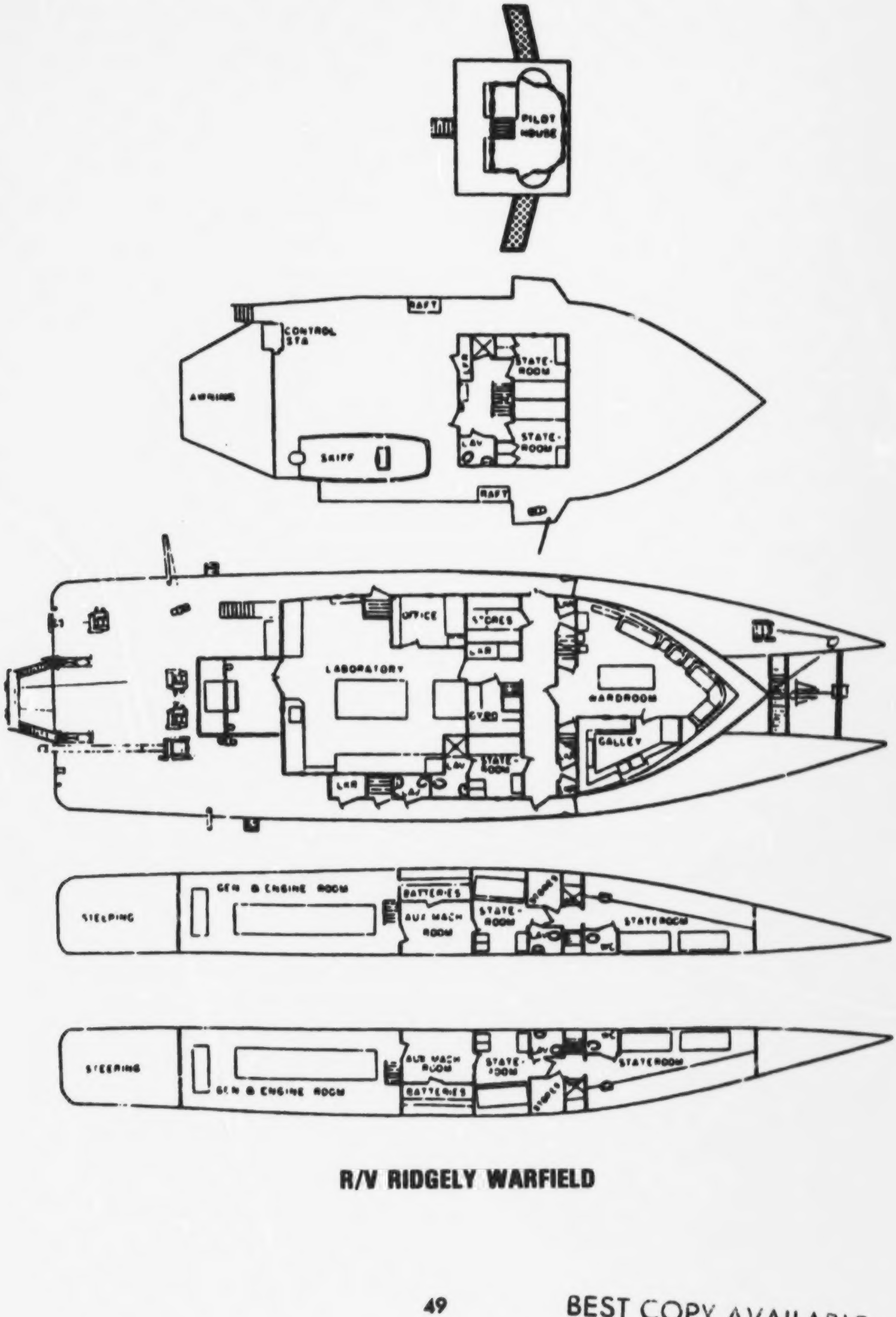


R/V RIDGELY WARFIELD


PILOT HOUSE
RAFT
CONTROL STA
AWNING
SKIFF
STATE-ROOM
LAV
STATE-ROOM
RAFT
OFFICE
STORES
LAB
LABORATORY
GYRO
STATE-ROOM
LAB
LAV
WARDROOM
GALLEY
STEERING
GEN & ENGINE ROOM
BATTERIES
AUX MACH ROOM
STATE-ROOM
STORES
STATEROOM
WC
STEERING
AUX MACH ROOM
STATE-ROOM
STATEROOM
GEN & ENGINE ROOM
BATTERIES
STORES

R/V RIDGELY WARFIELD

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              RIDGELY WARFIELD          LAST CHANGED 16 JAN 87

             OPS SCHEDULE FOR PERIOD
             01 JAN 87 THRU 31 DEC 87
       ....................................
OCEANOGRAPHIC RESEARCH          SELIGER             NSF

DEP:  06 JAN 87 ANNAPOLIS MD
ARR:  09 JAN 87 ANNAPOLIS MD      CHESAPEAKE BAY                4 DAY(S)
AREA INDEX: NA6

DEP:  10 FEB 87 ANNAPOLIS MD
ARR:  13 FEB 87 ANNAPOLIS MD      CHESAPEAKE BAY                4 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          RICE                NSF

DEP:  17 FEB 87 ANNAPOLIS                                       (F)
ARR:  19 FEB 87 ANNAPOLIS         CHESAPEAKE BAY                3 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          COLWELL             NSF

DEP:  20 FEB 87 ANNAPOLIS                                       (F)
ARR:  20 FEB 87 ANNAPOLIS         CHESAPEAKE BAY                1 DAY(S)
AREA INDEX: NA6

DEP:  31 MAR 87 ANNAPOLIS                                       (F)
ARR:  31 MAR 87 ANNAPOLIS         CHESAPEAKE BAY                1 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          RICE                NSF

DEP:  01 APR 87 ANNAPOLIS                                       (F)
ARR:  03 APR 87 ANNAPOLIS         CHESAPEAKE BAY                3 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          POWERS              NSF

DEP:  04 APR 87 ANNAPOLIS                                       (F)
ARR:  06 APR 87 ANNAPOLIS         CHESAPEAKE BAY                3 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          COLWELL             NSF

DEP:  23 APR 87 ANNAPOLIS                                       (F)
ARR:  23 APR 87 ANNAPOLIS         CHESAPEAKE BAY                1 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          POWERS              NSF

DEP:  27 APR 87 ANNAPOLIS                                       (F)
ARR:  30 APR 87 ANNAPOLIS         CHESAPEAKE BAY                4 DAY(S)
AREA INDEX: NA6

DEP:  01 MAY 87 ANNAPOLIS                                       (F)
ARR:  02 MAY 87 ANNAPOLIS         CHESAPEAKE BAY                2 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          BRUSH               NSF

DEP:  04 MAY 87 ANNAPOLIS                                       (P)
ARR:  08 MAY 87 ANNAPOLIS         CHESAPEAKE BAY                5 DAY(S)
AREA INDEX: NA6
       ....................................
OCEANOGRAPHIC RESEARCH          COLWELL             NSF
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DEP: 26 MAY 87 ANNAPOLIS                                                        (F)
ARR: 26 MAY 87 ANNAPOLIS            CHESAPEAKE BAY                              1 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            COATS                    NSF

DEP: 09 JUN 87 ANNAPOLIS                                                        (F)
ARR: 11 JUN 87 ANNAPOLIS            CHESAPEAKE BAY                              3 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            POWERS                   NSF

DEP: 15 JUN 87 ANNAPOLIS                                                        (F)
ARR: 19 JUN 87 ANNAPOLIS            CHESAPEAKE BAY                              5 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            COLWELL                  NSF

DEP: 30 JUN 87 ANNAPOLIS                                                        (F)
ARR: 30 JUN 87 ANNAPOLIS            CHESAPEAKE BAY                              1 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            RICE                     NSF

DEP: 01 JUL 87 ANNAPOLIS                                                        (F)
ARR: 03 JUL 87 ANNAPOLIS            CHESAPEAKE BAY                              3 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            COATS                    NSF

DEP: 07 JUL 87 ANNAPOLIS                                                        (F)
ARR: 10 JUL 87 ANNAPOLIS            CHESAPEAKE BAY                              4 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            BRUSH                    NSF

DEP: 13 JUL 87 ANNAPOLIS                                                        (F)
ARR: 17 JUL 87 ANNAPOLIS            CHESAPEAKE BAY                              5 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            COLWELL                  NSF

DEP: 20 JUL 87 ANNAPOLIS                                                        (F)
ARR: 20 JUL 87 ANNAPOLIS            CHESAPEAKE BAY                              1 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            COATS                    NSF

DEP: 21 JUL 87 ANNAPOLIS                                                        (F)
ARR: 24 JUL 87 ANNAPOLIS            CHESAPEAKE BAY                              4 DAY(S)
AREA INDEX: NA6

DEP: 04 AUG 87 ANNAPOLIS                                                        (F)
ARR: 06 AUG 87 ANNAPOLIS            CHESAPEAKE BAY                              3 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            COLWELL                  NSF

DEP: 17 AUG 87 ANNAPOLIS                                                        (F)
ARR: 17 AUG 87 ANNAPOLIS            CHESAPEAKE BAY                              1 DAY(S)
AREA INDEX: NA6
          .........................................
OCEANOGRAPHIC RESEARCH            COATS                    NSF

DEP: 18 AUG 87 ANNAPOLIS                                                        (F)
ARR: 21 AUG 87 ANNAPOLIS            CHESAPEAKE BAY                              4 DAY(S)
AREA INDEX: NA6

DEP: 02 SEP 87 ANNAPOLIS                                                        (F)
ARR: 04 SEP 87 ANNAPOLIS            CHESAPEAKE BAY                              3 DAY(S)
AREA INDEX: NA6
          .........................................
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OCEANOGRAPHIC RESEARCH          BRUSH                NSF

DEP: 07 SEP 87 ANNAPOLIS                                               (P)
ARR: 11 SEP 87 ANNAPOLIS          CHESAPEAKE BAY                       5 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          COLWELL              NSF

DEP: 15 SEP 87 ANNAPOLIS                                               (F)
ARR: 15 SEP 87 ANNAPOLIS          CHESAPEAKE BAY                       1 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          RICE                 NSF

DEP: 16 SEP 87 ANNAPOLIS                                               (F)
ARR: 18 SEP 87 ANNAPOLIS          CHESAPEAKE BAY                       3 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          COATS                NSF

DEP: 23 SEP 87 ANNAPOLIS                                               (F)
ARR: 25 SEP 87 ANNAPOLIS          CHESAPEAKE BAY                       3 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          COLWELL              NSF

DEP: 19 OCT 87 ANNAPOLIS                                               (F)
ARR: 23 OCT 87 ANNAPOLIS          CHESAPEAKE BAY                       5 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          BRUSH                NSF

DEP: 02 NOV 87 ANNAPOLIS                                               (P)
ARR: 06 NOV 87 ANNAPOLIS          CHESAPEAKE BAY                       5 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          COLWELL              NSF

DEP: 17 NOV 87 ANNAPOLIS                                               (F)
ARR: 17 NOV 87 ANNAPOLIS          CHESAPEAKE BAY                       1 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          RICE                 NSF

DEP: 23 NOV 87 ANNAPOLIS                                               (F)
ARR: 25 NOV 87 ANNAPOLIS          CHESAPEAKE BAY                       3 DAY(S)
AREA INDEX: NA6
          ..................................................
OCEANOGRAPHIC RESEARCH          COLWELL              NSF

DEP: 14 DEC 87 ANNAPOLIS                                               (F)
ARR: 14 DEC 87 ANNAPOLIS          CHESAPEAKE BAY                       1 DAY(S)
AREA INDEX: NA6
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ROBERT D CONRAD

POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC:	CAPT JOHN R DUDLEY
POC OFFICE:	MARINE SUPERINTENDENT
POC ORGANIZATION:	OFFICE OF MARINE AFFAIRS
POC ADDRESS:	LAMONT-DOHERTY GEOLOGICAL OBS.
POC CITY/STATE:	PALISADES, NY 10964
FTS PREFIX:	914
COMMERCIAL AREA CODE:	914
PHONE:	359-2900

ADMINISTRATIVE DETAILS

COMMON SHIP NAME:	CONRAD
DESIGNATOR:	AGOR 3
CLASS:	ROBERT D CONRAD/AGOR 3
CALL SIGN (INTERNATIONAL):	WHBA
FLEET:	UNOLS
SHIP TYPE:	OCEAN RESEARCH-GENERAL
SHIP OWNER:	USN
CERTIFICATION AUTHORITY:	US COAST GUARD - ABS
FLAG REGISTRY:	USA
HOME PORT:	PIERMONT NY
TECHNICAL SPONSOR:	LAMONT-DOHERTY GEOLOGICAL OBSERVATORY
OPERATIONS CONTROL:	LDGO, OFFICE OF MARIE AFFAIRS
CONTRACTUAL INFORMATION:	ONR CODE 611 LEASE TO EXPIRE 07 JAN 87 CON # - N00014-82-L-0043
OPERATING COST/DAY:	10.5/87 THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT:	22
NUMBER OFFICERS:	8
NUMBER IN CREW:	14
MAX SEA STATE:	6 BEAUFORT SCALE
ENDURANCE:	45 DAY(S)
LIMITING FACTOR:	FUEL
BUILDER:	GIBBS SHIPYARD CORPORATION
WHERE BUILT:	JACKSONVILLE FL USA
INITIAL COST:	-
DUE DATE:	'00
KEEL DATE:	19 JAN 61
LAUNCH DATE:	26 MAY 62
DELIVERY DATE:	29 NOV 62
COMMISSION DATE:	'00
CONVERSION DATE:	'00
LAST OVERHAUL:	14 MAR 86
MAINTENANCE CYCLE:	2.0 YEARS
END OF LIFE:	1997
UPDATE OF INFORMATION:	08 JAN 87

SHIP DIMENSIONS

LENGTH:	208.0 FEET
MAX BEAM:	37.5 FEET
HEIGHT:	79.0 FEET
GROSS TONNAGE:	1072
DISPLACEMENT:	1428 TONS
DRAUGHT:	18.0 FEET
CRUISE SPEED:	10.0 KNOTS
RANGE:	9000 NAUTICAL MILES
MAX SPEED:	12.0 KNOTS
MIN SPEED:	1.0 KNOTS

ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:	DIESEL ELECTRIC
AUXILIARY PROPULSION:	DIESEL ELECTRIC
NUMBER OF SHAFTS:	1
BOW THRUSTER:	RETRACTABLE
ACTIVE RUDDER:	N
DYNAMIC POSITIONING:	N
ANTI-ROLL:	Y
STABILIZER:	N
DEEP ANCHOR:	- FEET
BERTHING VAN DIMENSIONS:	NO
INSTRUMENT VAN DIMENSIONS:	8X8X20
WET-LAB:	Y
DRY-LAB:	Y
AMMUNITION STORAGE:	Y
HELO SUPPORT:	N
METEOROLOGICAL OBSERVATIONS:	MINIMAL
UTILITY BOATS:	
1. 17 FOOT SKIFF	
A, U, OR L FRAMES	
MAX HOIST CAPACITY:	40000 POUNDS
NUMBER OF FRAMES:	1
CRANES OR BOOMS	
MAX HOIST CAPACITY:	12000 POUNDS
NUMBER OF CRANES:	2
WINCHES:	
01. MAJOR TYPE/USE:	CORING
SECONDARY TYPE/USE:	DREDGE
SLIP-RINGS:	Y
WIRE TYPE:	WIRE ROPE
WIRE LENGTH:	30000 FEET
WIRE DIAMETER:	0.562 INCHES
SECONDARY WIRE TYPE:	CONDUCTOR CABLE
SECONDARY WIRE LEN:	30000 FEET
SECONDARY WIRE DIAM:	0.680 INCHES
02. MAJOR TYPE/USE:	HYDROGRAPHIC
SECONDARY TYPE/USE:	CTD
SLIP-RINGS:	3
WIRE TYPE:	CONDUCTOR CABLE
WIRE LENGTH:	30000 FEET
WIRE DIAMETER:	0.320 INCHES
03. MAJOR TYPE/USE:	HYDROGRAPHIC
SECONDARY TYPE/USE:	OTHER
SLIP-RINGS:	3
WIRE TYPE:	WIRE ROPE
WIRE LENGTH:	30000 FEET
WIRE DIAMETER:	0.250 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS:	NOVA,VAX,HP,IBM
FACSIMILE:	Y
ELECTROMAGNETIC LOG:	Y
INERTIAL NAVIGATION:	N
RADAR (SURFACE SCAN):	Y
LORAN A:	N
LORAN C:	Y
OMEGA:	N
SATELLITE NAVIGATION:	Y
RADIO TELETYPE COMMUNICATION:	Y
SINGLE SIDE BAND:	Y
VHF COMMUNICATIONS:	Y
STABLE TABLE:	N
NARROW BEAM:	N
SEISMIC PROFILING:	Y
SIDE SCAN:	N
SOUNDING SYSTEM (SHALLOW):	SIMRAD
SOUNDING SYSTEM (DEEP):	12 & 3.5 KHZ

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        FUEL DETAILS

   FUEL CAPACITY:                      68000 GALLONS
   FUEL TYPE:                                MARINE GAS OIL
   FUEL CONSUMPTION RATES:
       AT NORMAL CRUISING SPEED:        1800 GAL/24-HRS
       DURING AVERAGE OPERATIONS:       1400 GAL/24-HRS
       DURING INPORT OPERATIONS:         250 GAL/24-HRS

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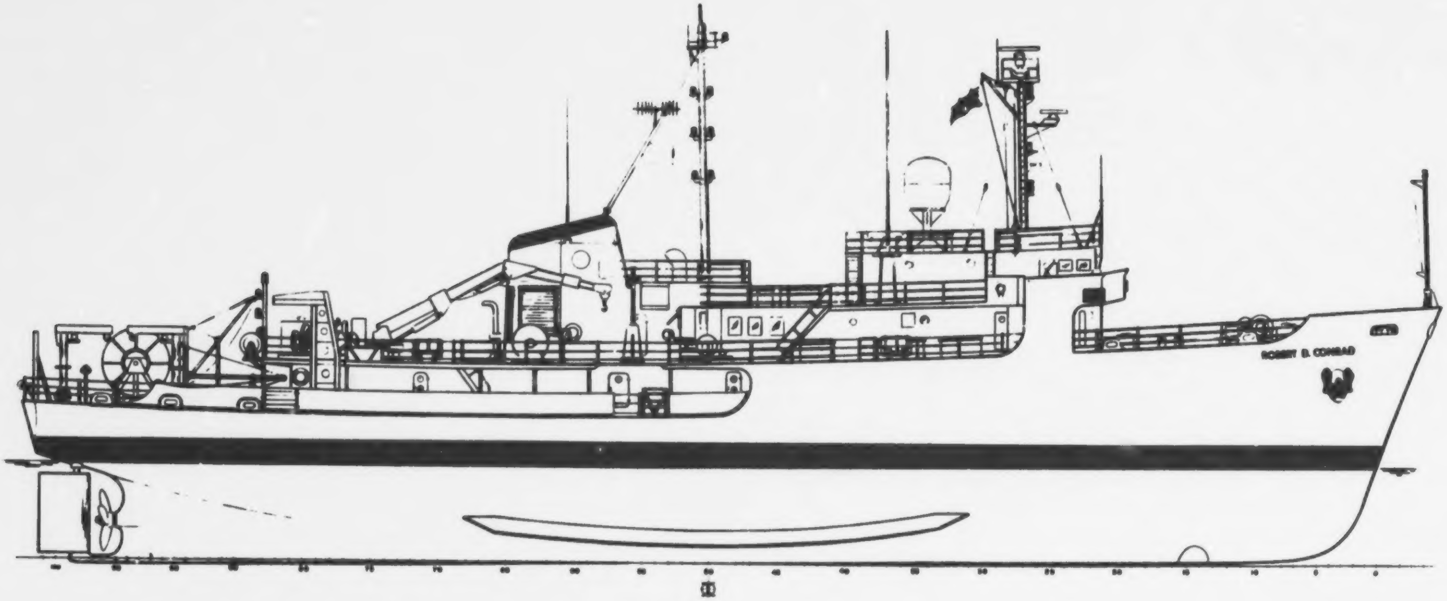
ROBERT D. CONRAD

R/V ROBERT D. CONRAD

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                 ROBERT D CONRAD           LAST CHANGED 21 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87
         .............................................
OCEANOGRAPHIC RESEARCH          KATZ                 NSF

DEP: 04 JAN 87 RIO DE JANEIRO     EQUATORIAL ATLANTIC         (F)
ARR: 27 JAN 87 RECIFE             MOORING RECOVERY                24 DAY(S)
AREA INDEX: SA1
         .............................................
OCEANOGRAPHIC RESEARCH          FLEMING, FOX, CANDE  ONR/NRL

DEP: 31 JAN 87 RECIFE                                         (F)
ARR: 02 MAR 87 MONTEVIDEO         S. ATLANTIC                     31 DAY(S)
AREA INDEX: SA1   SA3A  SA3
         .............................................
OCEANOGRAPHIC RESEARCH          WHITWORTH            NSF

DEP: 11 MAR 87 MONTEVIDEO         SOUTH ATLANTIC              (F)
ARR: 15 APR 87 MONTEVIDEO         CTD, MOORING RECOVERY           36 DAY(S)
AREA INDEX: SA3A
         .............................................
OCEANOGRAPHIC RESEARCH          FLOOD                ONR

DEP: 19 APR 87 MONTEVIDEO         SOUTH ATLANTIC              (P)
ARR: 24 MAY 87 RIO DE JANEIRO     ARGENTINE BASIN SEDIMENTS       36 DAY(S)
AREA INDEX: SA3A  SA1   SA3
         .............................................
TRANSIT                                              NSF/ONR

DEP: 28 MAY 87 RIO DE JANEIRO
ARR: 01 JUN 87 RECIFE             TRANSIT                          5 DAY(S)
AREA INDEX: SA1
         .............................................
OCEANOGRAPHIC RESEARCH          SCHILLING            NSF

DEP: 03 JUN 87 RECIFE             EQUATORIAL ATLANTIC         (F)
ARR: 07 JUL 87 FORTALEZA          MAR - PETROLOGY                 35 DAY(S)
AREA INDEX: SA1
         .............................................
TRANSIT                                              NSF

DEP: 10 JUL 87 FORTALEZA
ARR: 20 JUL 87 SAN JUAN           TRANSIT                         11 DAY(S)
AREA INDEX: SA1   NA9   NA10
         .............................................
OUT OF SERVICE                                       NSF

DEP: 21 JUL 87 SAN JUAN           MAINTENANCE & SEA TRIALS
ARR: 04 AUG 87 SAN JUAN           INSURV INSPECTION               15 DAY(S)
AREA INDEX: NA9
         .............................................
OCEANOGRAPHIC RESEARCH                               PFS

DEP: 05 AUG 87 SAN JUAN           NORTH ATLANTIC              (P)
ARR: 31 AUG 87 VALENCIA           CABLE SURVEY                    27 DAY(S)
AREA INDEX: NA9
         .............................................
OCEANOGRAPHIC RESEARCH          WATTS                NSF

DEP: 04 SEP 87 VALENCIA           VALENCIA BASIN              (F)
ARR: 04 OCT 87 GIBRALTAR          2-SHIP MCS W/FRENCH             31 DAY(S)
AREA INDEX: NA9   NA7   NA6
         .............................................
OPEN
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DEP: 08 OCT 87 GIBRALTAR
ARR: 23 OCT 87 BERMUDA            OPEN                              16 DAY(S)
AREA INDEX: OPEN
      . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH          DETRICK                 ONR

DEP: 27 OCT 87 BERMUDA            BERMUDA BASIN                (F)
ARR: 20 NOV 87 SAN JUAN           MCS (2-SHIP OPS)                  25 DAY(S)
AREA INDEX: NA6   NA9
      . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
TRANSIT                                                 NSF

DEP: 23 NOV 87 SAN JUAN
ARR: 29 NOV 87 PANAMA             TRANSIT                            7 DAY(S)
AREA INDEX: NA9   NP13
      . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH          PURDY                   NSF

DEP: 03 DEC 87 PANAMA             EPR 13N                      (F)
ARR: 28 DEC 87 PANAMA             OBS SEISMIC SURVEY                26 DAY(S)
AREA INDEX: NP13
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CALANUS

POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC: MR RON HUTCHINSON
POC OFFICE: MANAGER, MARINE OPERATIONS
POC ORGANIZATION: UNIVERSITY OF MIAMI
POC ADDRESS: 1620 PORT BOULEVARD
POC CITY/STATE: MIAMI FL 33132
FTS PREFIX: 305
COMMERCIAL AREA CODE: 305
PHONE: 373-3830

ADMINISTRATIVE DETAILS

DESIGNATOR: ORV
CLASS: CLASS E
CALL SIGN (INTERNATIONAL): WZJ5177
FLEET: UNOLS
SHIP TYPE: OCEAN RESEARCH-GENERAL
SHIP OWNER: UNIVERSITY OF MIAMI
CERTIFICATION AUTHORITY: NONE
FLAG REGISTRY: USA
HOME PORT: MIAMI FL
TECHNICAL SPONSOR: UNIV. OF MIAMI
OPERATIONS CONTROL: UNIVERSITY OF MIAMI
CONTRACTUAL INFORMATION: NONE
OPERATING COST/DAY: 1.6/85 THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT: 6
NUMBER OFFICERS: 1
NUMBER IN CREW: 1
MAX SEA STATE: 4 BEAUFORT SCALE
ENDURANCE: 15 DAY(S)
LIMITING FACTOR: CREW
BUILDER: ATLANTIC MARINE INC
WHERE BUILT: FL USA
INITIAL COST: .089/71 MILLION $'S IN YEAR
DUE DATE: '00
KEEL DATE: 00 MAR 71
LAUNCH DATE: '71
DELIVERY DATE: 00 SEP 71
COMMISSION DATE: 00 OCT 71
CONVERSION DATE: '85
LAST OVERHAUL: '85
MAINTENANCE CYCLE: 1.0 YEARS
END OF LIFE: 1995
UPDATE OF INFORMATION: 17 DEC 85

SHIP DIMENSIONS

LENGTH: 69.0 FEET
MAX BEAM: 20.0 FEET
HEIGHT: 24.0 FEET
GROSS TONNAGE: 83
DISPLACEMENT: 88 TONS
DRAUGHT: 4.9 FEET
CRUISE SPEED: 8.0 KNOTS
RANGE: 2500 NAUTICAL MILES
MAX SPEED: 9.0 KNOTS
MIN SPEED: 4.0 KNOTS

ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL GEARED
AUXILIARY PROPULSION: NO
NUMBER OF SHAFTS: 2
BOW THRUSTER: NO
ACTIVE RUDDER: N
DYNAMIC POSITIONING: N
ANTI-ROLL: N
STABILIZER: N
DEEP ANCHOR: NONE FEET
BERTHING VAN DIMENSIONS: NO
INSTRUMENT VAN DIMENSIONS: 8X8X12
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: Y
UTILITY BOATS:
  1. 13 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY: 5000 POUNDS
  NUMBER OF FRAMES: 1
CRANES OR BOOMS
  MAX HOIST CAPACITY: POUNDS
  NUMBER OF CRANES: 0
WINCHES:
  01. MAJOR TYPE/USE: HYDROGRAPHIC
    SECONDARY TYPE/USE: UNKNOWN
    SLIP-RINGS: Y
    WIRE TYPE: CONDUCTOR CABLE
    WIRE LENGTH: 15000 FEET
    WIRE DIAMETER: 0.322 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: HP 85 (2)
FACSIMILE: N
ELECTROMAGNETIC LOG: N
INERTIAL NAVIGATION: N
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: N
SATELLITE NAVIGATION: Y
RADIO TELETYPE COMMUNICATION: N
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y
STABLE TABLE: N
NARROW BEAM: N
SEISMIC PROFILING: N
SIDE SCAN: N
SOUNDING SYSTEM (SHALLOW): RAYTHEON
SOUNDING SYSTEM (DEEP): RAYTHEON

FUEL DETAILS

FUEL CAPACITY: 4000 GALLONS
FUEL TYPE: MG-O/DIESEL #2/LIGHT DO
FUEL CONSUMPTION RATES:
  AT NORMAL CRUISING SPEED: 216 GAL/24-HRS
  DURING AVERAGE OPERATIONS: 150 GAL/24-HRS
  DURING INPORT OPERATIONS: 20 GAL/24-HRS

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               CALANUS                 LAST CHANGED 21 JAN 87

              OPS SCHEDULE FOR PERIOD
              01 JAN 87 THRU 31 DEC 87
          ..........................................
OCEANOGRAPHIC RESEARCH        GRUBER                NSF

DEP: 15 JAN 87 MIAMI                                            (F)
ARR: 19 JAN 87 BAHAMAS          BAHAMAS                         5 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        CAPONE(SUNY)          NSF

DEP: 24 JAN 87 BAHAMAS                                          (F)
ARR: 16 FEB 87 MIAMI            SAN SALVADOR IS.               24 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        GRUBER                NSF

DEP: 26 FEB 87 MIAMI                                            (F)
ARR: 02 MAR 87 BAHAMAS          BAHAMAS                         5 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        FROEHLICH             NSF

DEP: 07 MAR 87 BAHAMAS                                          (F)
ARR: 27 MAR 87 BAHAMAS          BAHAMAS                        21 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        GRUBER                NSF

DEP: 02 APR 87 BAHAMAS                                          (F)
ARR: 06 APR 87 MIAMI            BAHAMAS                         5 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        MADIN(WHOI)           NSF

DEP: 13 APR 87 MIAMI                                            (F)
ARR: 27 APR 87 MIAMI            TONGUE OF THE OCEAN            15 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        ORTNER(NOAA)          ONR

DEP: 02 MAY 87 MIAMI                                            (F)
ARR: 03 MAY 87 MIAMI            STRAITS OF FLORIDA              2 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        LAPOINTE(HB)          NSF

DEP: 07 MAY 87 MIAMI                                            (F)
ARR: 05 JUN 87 BELIZE           OFF BELIZE                     30 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        FROELICH              NSF

DEP: 06 JUN 87 BELIZE                                           (F)
ARR: 03 JUL 87 MIAMI            OFF BELIZE                     28 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        GRUBER                NSF

DEP: 16 JUL 87 MIAMI                                            (F)
ARR: 20 JUL 87 MIAMI            BAHAMAS                         5 DAY(S)
AREA INDEX: NA9
          ..........................................
OCEANOGRAPHIC RESEARCH        NEUMANN (UNC)         NSF
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```
DEP: 27 JUL 87 MIAMI                                                              (F)
ARR: 05 AUG 87 MIAMI              BAHAMAS                                      10 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          MYRBERG                   NSF

DEP: 13 AUG 87 MIAMI                                                              (R)
ARR: 14 AUG 87 MIAMI              STRAITS OF FLORIDA                              2 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          GRUBER                    NSF

DEP: 20 AUG 87 MIAMI                                                              (F)
ARR: 24 AUG 87 MIAMI              BAHAMAS                                         5 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          MYRBERG                   ONR

DEP: 31 AUG 87 MIAMI                                                              (F)
ARR: 09 SEP 87 MIAMI              STRAITS OF FLORIDA                             10 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          GRUBER                    NSF

DEP: 17 SEP 87 MIAMI                                                              (F)
ARR: 21 SEP 87 MIAMI              BAHAMAS                                         5 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          MADIN (WHOI)              NSF

DEP: 28 SEP 87 MIAMI                                                              (F)
ARR: 12 OCT 87 MIAMI              TONGUE OF THE OCEAN                            15 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          ZIKA                      ONR

DEP: 16 OCT 87 MIAMI                                                              (R)
ARR: 20 OCT 87 MIAMI              STRAITS OF FLORIDA                              5 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          GRUBER                    NSF

DEP: 29 OCT 87 MIAMI                                                              (F)
ARR: 02 NOV 87 MIAMI              BAHAMAS                                         5 DAY(S)
AREA INDEX: NA9

DEP: 03 DEC 87 MIAMI                                                              (F)
ARR: 07 DEC 87 MIAMI              BAHAMAS                                         5 DAY(S)
AREA INDEX: NA9
          ......................................................
OCEANOGRAPHIC RESEARCH          ZIKA                      ONR

DEP: 14 DEC 87 MIAMI                                                              (R)
ARR: 17 DEC 87 MIAMI              STRAITS OF FLORIDA                              4 DAY(S)
AREA INDEX: NA9
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              COLUMBUS ISELIN
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        POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                        MR RON HUTCHINSON
  POC OFFICE:                 MANAGER, MARINE OPERATIONS
  POC ORGANIZATION:           UNIVERSITY OF MIAMI
  POC ADDRESS:                1620 PORT BOULEVARD
  POC CITY/STATE:             MIAMI FL  33132
  FTS PREFIX:                 305
  COMMERCIAL AREA CODE:       305
  PHONE:                      373-3830

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           ADMINISTRATIVE DETAILS

  COMMON SHIP NAME:               ISELIN
  DESIGNATOR:                     ORV
  CLASS:                          CLASS C
  CALL SIGN (INTERNATIONAL):      WZJ5166
  FLEET:                          UNOLS
  SHIP TYPE:                      OCEAN RESEARCH-GENERAL
  SHIP OWNER:                     UNIV. OF MIAMI
  CERTIFICATION AUTHORITY:        AMERICAN BUREAU OF SHIPPING
  FLAG REGISTRY:                  USA
  HOME PORT:                      MIAMI FL
  TECHNICAL SPONSOR:              UNIV. OF MIAMI
  OPERATIONS CONTROL:             UNIV. OF MIAMI
  CONTRACTUAL INFORMATION:        NONE
  OPERATING COST/DAY:             7.0/86                      THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:           24
  NUMBER OFFICERS:                 6
  NUMBER IN CREW:                    6
  MAX SEA STATE:                   5 BEAUFORT SCALE
  ENDURANCE:                       30 DAY(S)
  LIMITING FACTOR:                CREW
  BUILDER:                        J BELLINGER SHIPYARDS INC
  WHERE BUILT:                    JACKSONVILLE FL USA
  INITIAL COST:                   1.4/72   MILLION $'S IN YEAR
  DUE DATE:                       '00
  KEEL DATE:                      00 FEB 71
  LAUNCH DATE:                    '71
  DELIVERY DATE:                  15 SEP 72
  COMMISSION DATE:                15 SEP 72
  CONVERSION DATE:                '00
  LAST OVERHAUL:                  '84
  MAINTENANCE CYCLE:              1.0 YEARS
  END OF LIFE:                    2002
  UPDATE OF INFORMATION:          17 DEC 85

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         SHIP DIMENSIONS

  LENGTH:               170.0 FEET
  MAX BEAM:             36.0 FEET
  HEIGHT:                60.0 FEET
  GROSS TONNAGE:          281
  DISPLACEMENT:           830 TONS
  DRAUGHT:              10.5 FEET
  CRUISE SPEED:         13.0 KNOTS
  RANGE:                 9700 NAUTICAL MILES
  MAX SPEED:            14.5 KNOTS
  MIN SPEED:             1.0 KNOTS
```

ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                  DIESEL GEARED
AUXILIARY PROPULSION:             NO
NUMBER OF SHAFTS:                 2
BOW THRUSTER:                     TUNNEL
ACTIVE RUDDER:                    N
DYNAMIC POSITIONING:              N
ANTI-ROLL:                        N
STABILIZER:                       N
DEEP ANCHOR:                      NONE  FEET
BERTHING VAN DIMENSIONS:          8X8X20
INSTRUMENT VAN DIMENSIONS:        8X8X20
WET-LAB:                          Y
DRY-LAB:                          Y
AMMUNITION STORAGE:               N
HELO SUPPORT:                     N
METEOROLOGICAL OBSERVATIONS:      Y
UTILITY BOATS:
    1. 18 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:             30000 POUNDS
  NUMBER OF FRAMES:               2
CRANES OR BOOMS
  MAX HOIST CAPACITY:             20000 POUNDS
  NUMBER OF CRANES:               3
WINCHES:
    01. MAJOR TYPE/USE:           TRAWL
        SECONDARY TYPE/USE:       DREDGE
        SLIP-RINGS:               Y
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:              33000 FEET
        WIRE DIAMETER:            0.562 INCHES
    02. MAJOR TYPE/USE:           HYDROGRAPHIC
        SECONDARY TYPE/USE:       STD
        SLIP-RINGS:               Y
        WIRE TYPE:                CONDUCTOR CABLE
        WIRE LENGTH:              33000 FEET
        WIRE DIAMETER:            0.322 INCHES
    03. MAJOR TYPE/USE:           HYDROGRAPHIC
        SECONDARY TYPE/USE:       STD
        SLIP-RINGS:               Y
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:              33000 FEET
        WIRE DIAMETER:            0.187 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                        3-HP85, HP9807
FACSIMILE:                        Y
ELECTROMAGNETIC LOG:              N
INERTIAL NAVIGATION:              N
RADAR (SURFACE SCAN):             Y
LORAN A:                          N
LORAN C:                          Y
OMEGA:                            Y
SATELLITE NAVIGATION:             Y
RADIO TELETYPE COMMUNICATION:     N
SINGLE SIDE BAND:                 Y
VHF COMMUNICATIONS:               Y
STABLE TABLE:                     N
NARROW BEAM:                      N
SEISMIC PROFILING:                Y
SIDE SCAN:                        N
SOUNDING SYSTEM (SHALLOW):        RAYTHEON
SOUNDING SYSTEM (DEEP):           EDO/RAYTHEON
```

FUEL DETAILS

```
  FUEL CAPACITY:                   56000 GALLONS
  FUEL TYPE:                             DIESEL #2/MG-O/LIGHT DO
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:     1800 GAL/24-HRS
      DURING AVERAGE OPERATIONS:     869 GAL/24-HRS
      DURING INPORT OPERATIONS:      160 GAL/24-HRS

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                COLUMBUS ISELIN        LAST CHANGED 21 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

      ........................................
TRANSIT                                              NSF

DEP: 02 JAN 87 MIAMI                                                 (F)
ARR: 17 JAN 87 MARSEILLES          TRANSIT                      16 DAY(S)
AREA INDEX: NA9    NA8    NA7    NA6
      ........................................
OCEANOGRAPHIC RESEARCH           SCHOTT/LEAMAN/ZIKA      NSF

DEP: 20 JAN 87 MARSEILLES                                            (F)
ARR: 02 MAR 87 MARSEILLES          NW MEDITERRANEAN             42 DAY(S)
AREA INDEX: NA8
      ........................................
TRANSIT                                              NSF

DEP: 03 MAR 87 MARSEILLES                                            (F)
ARR: 17 MAR 87 MIAMI               TRANSIT                      15 DAY(S)
AREA INDEX: NA8    NA9    NA7    NA6
      ........................................
OCEANOGRAPHIC RESEARCH           WILSON (SCRIPPS)        NSF

DEP: 26 MAR 87 MIAMI                                                 (F)
ARR: 31 MAR 87 MIAMI               E. GULF OF MEXICO             6 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH           GRUBER                  NSF

DEP: 07 APR 87 MIAMI                                                 (F)
ARR: 21 APR 87 MIAMI               BAHAMAS                      15 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH           ZIKA                    NSF

DEP: 30 APR 87 MIAMI                                                 (F)
ARR: 09 MAY 87 MIAMI               NORTH ATLANTIC               10 DAY(S)
AREA INDEX: NA9
      ........................................
OPEN

DEP: 10 MAY 87 MIAMI
ARR: 13 JUL 87 MIAMI               OPEN                         65 DAY(S)
AREA INDEX: OPEN
      ........................................
OCEANOGRAPHIC RESEARCH           LEE                     DOE

DEP: 16 JUL 87 MIAMI                                                 (R)
ARR: 20 JUL 87 MIAMI               NO. FLORIDA SHELF             5 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH           ZIKA                    NSF

DEP: 27 JUL 87 MIAMI                                                 (F)
ARR: 10 AUG 87 MIAMI               NO. ATLANTIC                 15 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH           GRUBER                  NSF

DEP: 14 AUG 87 MIAMI                                                 (F)
ARR: 28 AUG 87 MIAMI               BAHAMAS                      15 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH           ZIKA                    ONR
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DEP: 07 SEP 87 MIAMI                                                    (R)
ARR: 16 SEP 87 MIAMI                NO. ATLANTIC                      10 DAY(S)
AREA INDEX: NA9
     ........................................
OPEN

DEP: 17 SEP 87 MIAMI
ARR: 10 OCT 87 MIAMI                OPEN                              24 DAY(S)
AREA INDEX: OPEN
     ........................................
OCEANOGRAPHIC RESEARCH            GRUBER                NSF

DEP: 12 OCT 87 MIAMI                                                    (F)
ARR: 26 OCT 87 MIAMI                BAHAMAS                           15 DAY(S)
AREA INDEX: NA9
     ........................................
OCEANOGRAPHIC RESEARCH            ZIKA                  ONR

DEP: 10 NOV 87 MIAMI                                                    (R)
ARR: 23 NOV 87 MIAMI                NORTH ATLANTIC                    14 DAY(S)
AREA INDEX: NA9
     ........................................
OCEANOGRAPHIC RESEARCH            LEE                   DOE

DEP: 30 NOV 87 MIAMI                                                    (R)
ARR: 04 DEC 87 MIAMI                NO. FLORIDA SHELF                  5 DAY(S)
AREA INDEX: NA9
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

   POC:                        MR MIKE PRINCE
   POC OFFICE:                 MARINE OPERATIONS
   POC ORGANIZATION:           MOSS LANDING MARINE LABORATORY
   POC ADDRESS:                P O BOX 450
   POC CITY/STATE:             MOSS LANDING CA 95039
   FTS PREFIX:                 408
   COMMERCIAL AREA CODE:       408
   PHONE:                      633-3534

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           ADMINISTRATIVE DETAILS

   DESIGNATOR:                      RV
   CLASS:                           PURSE SEINER
   CALL SIGN (INTERNATIONAL):       WXE2578
   FLEET:                           UNOLS
   SHIP TYPE:                       OCEANOGRAPHIC MOTOR VESSEL
   SHIP OWNER:                      NATIONAL SCIENCE FOUNDATION
   CERTIFICATION AUTHORITY:         -
   FLAG REGISTRY:                   USA
   HOME PORT:                       MOSS LANDING CA
   TECHNICAL SPONSOR:               MOSS LANDING MARINE LABORATORY
   OPERATIONS CONTROL:              MOSS LANDING MARINE LABORATORY
   CONTRACTUAL INFORMATION:         NONE
   OPERATING COST/DAY:                4.0/85                            THOUSAND $'S IN YR
   SCIENTIFIC COMPLEMENT:             8
   NUMBER OFFICERS:                  4
   NUMBER IN CREW:                     3
   MAX SEA STATE:                    4 BEAUFORT SCALE
   ENDURANCE:                        20 DAY(S)
   LIMITING FACTOR:                 STORES
   BUILDER:                         ALBINA ENGINE AND MACHINE WORKS
   WHERE BUILT:                     PORTLAND OR USA
   INITIAL COST:                    -
   DUE DATE:                        '00
   KEEL DATE:                       '00
   LAUNCH DATE:                     '68
   DELIVERY DATE:                   '68
   COMMISSION DATE:                 '00
   CONVERSION DATE:                 '00
   LAST OVERHAUL:                   01 JAN 84
   MAINTENANCE CYCLE:               2.0 YEARS
   END OF LIFE:                     1993
   UPDATE OF INFORMATION:           07 JAN 87

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         SHIP DIMENSIONS

   LENGTH:                 80.0 FEET
   MAX BEAM:              24.0 FEET
   HEIGHT:                     FEET
   GROSS TONNAGE:           165
   DISPLACEMENT:            173 TONS
   DRAUGHT:               10.0 FEET
   CRUISE SPEED:           9.0 KNOTS
   RANGE:                 4500 NAUTICAL MILES
   MAX SPEED:             10.0 KNOTS
   MIN SPEED:              0.5 KNOTS

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ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                   DIESEL GEARED
AUXILIARY PROPULSION:              BOW THRUSTER
NUMBER OF SHAFTS:                  1
BOW THRUSTER:                      RETRACTABLE
ACTIVE RUDDER:                     N
DYNAMIC POSITIONING:               N
ANTI-ROLL:                         N
STABILIZER:                        N
DEEP ANCHOR:                       NONE  FEET
BERTHING VAN DIMENSIONS:           NO
INSTRUMENT VAN DIMENSIONS:         NO
WET-LAB:                           Y
DRY-LAB:                           Y
AMMUNITION STORAGE:                N
HELO SUPPORT:                      N
METEOROLOGICAL OBSERVATIONS:       -
UTILITY BOATS:
    1. 14 FOOT BOSTON WHALER
A, U, OR L FRAMES
  MAX HOIST CAPACITY:               2000 POUNDS
  NUMBER OF FRAMES:                2
CRANES OR BOOMS
  MAX HOIST CAPACITY:              13230 POUNDS
  NUMBER OF CRANES:                1
WINCHES:
    01. MAJOR TYPE/USE:            TRAWL
        SECONDARY TYPE/USE:
        SLIP-RINGS:                N
        WIRE TYPE:                 WIRE ROPE
        WIRE LENGTH:               19800 FEET
        WIRE DIAMETER:             0.375 INCHES
    02. MAJOR TYPE/USE:            HYDROGRAPHIC
        SECONDARY TYPE/USE:        STD
        SLIP-RINGS:                4
        WIRE TYPE:                 CONDUCTOR CABLE
        WIRE LENGTH:                9070 FEET
        WIRE DIAMETER:             0.219 INCHES
        SECONDARY WIRE TYPE:       WIRE ROPE
        SECONDARY WIRE LEN:         9900 FEET
        SECONDARY WIRE DIAM:       0.187 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                          NONE
FACSIMILE:                          Y
ELECTROMAGNETIC LOG:                Y
INERTIAL NAVIGATION:                N
RADAR (SURFACE SCAN):               Y
LORAN A:                            N
LORAN C:                            Y
OMEGA:                              Y
SATELLITE NAVIGATION:               Y
RADIO TELETYPE COMMUNICATION:       N
SINGLE SIDE BAND:                   Y
VHF COMMUNICATIONS:                 Y
STABLE TABLE:                       N
NARROW BEAM:                        N
SEISMIC PROFILING:                  Y
SIDE SCAN:                          N
SOUNDING SYSTEM (SHALLOW):          JRC COLOR SOUNDER
SOUNDING SYSTEM (DEEP):             JRC COLOR SD
```

FUEL DETAILS

```
FUEL CAPACITY:                        10500 GALLONS
FUEL TYPE:                                 DIESEL #2
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  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:         200 GAL/24-HRS
      DURING AVERAGE OPERATIONS:        150 GAL/24-HRS
      DURING INPORT OPERATIONS:          30 GAL/24-HRS

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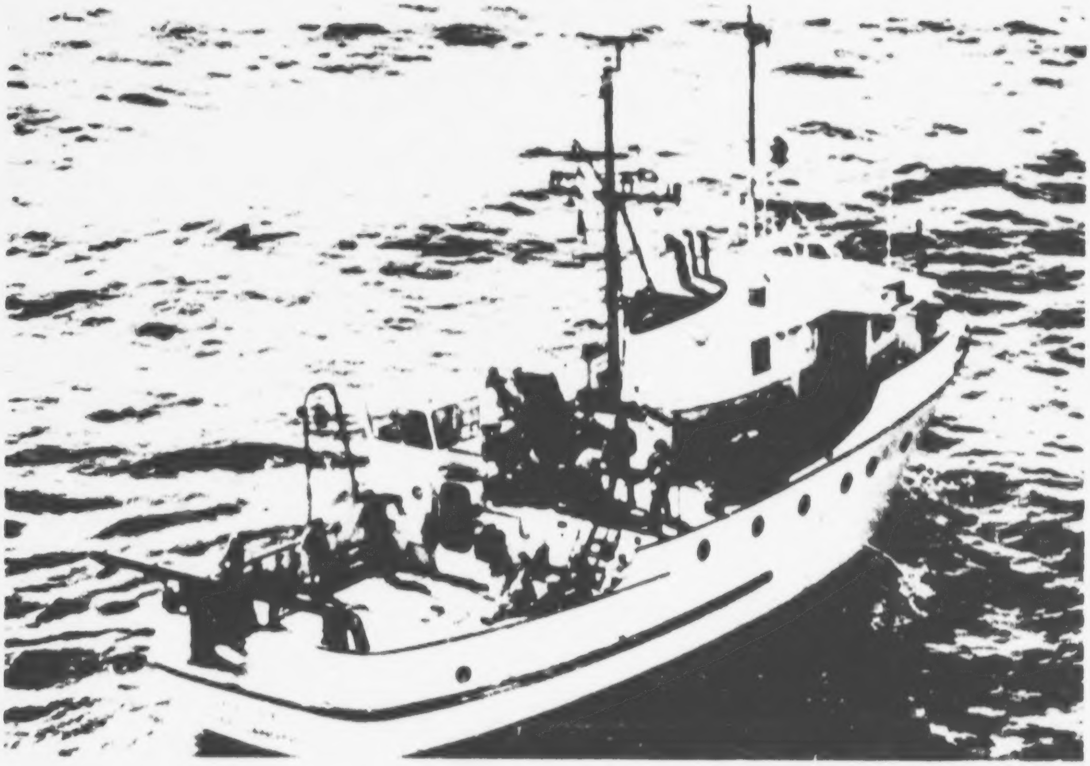
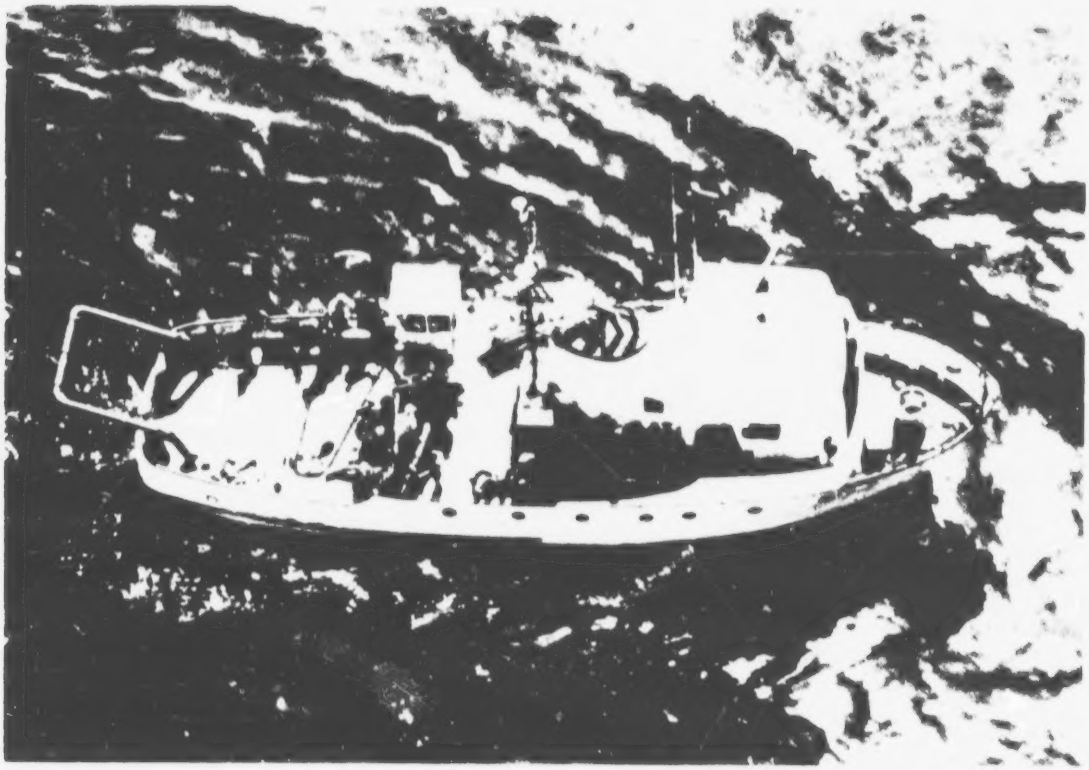
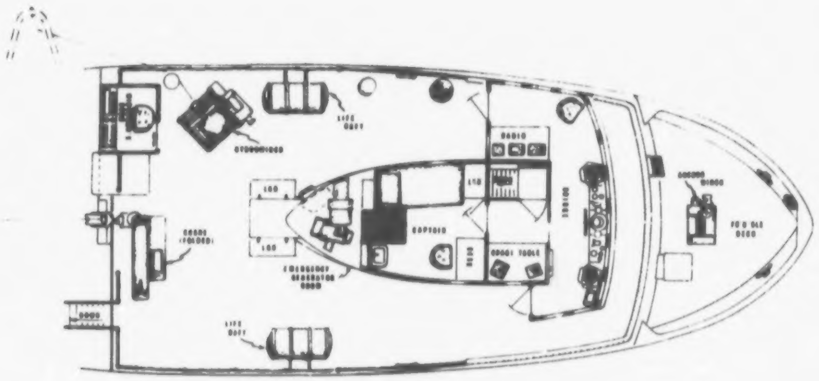
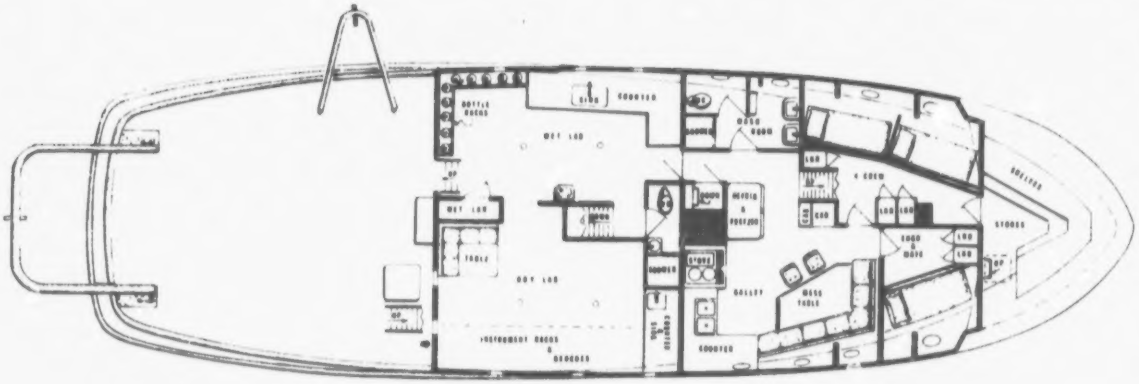




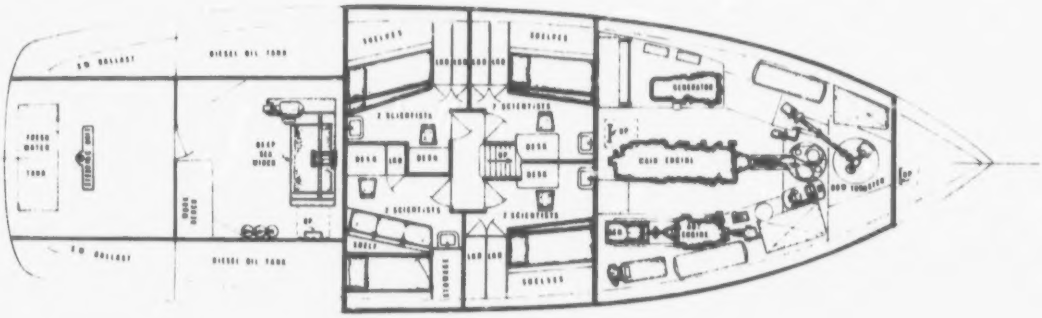
R/V CAYUSE


RADIO
LIFE RAFT
LIFE RAFT

UPPER DECK


BOTTLE RACKS
SINK
COUNTER
WET LAB
WASH ROOM
4 CREW
WET LAB
TABLE
DRY LAB
STOVE
GALLEY
MESS TABLE
COUNTER
STORES

MAIN DECK


DIESEL OIL TANK
DIESEL OIL TANK
SHELVES
SHELVES
SHELVES
2 SCIENTISTS
2 SCIENTISTS
2 SCIENTISTS
2 SCIENTISTS
DESK
DESK
DESK
DESK
GENERATOR
MAIN ENGINE
FRESH WATER TANK

R/V CAYUSE

LOWER DECK

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                 CAYUSE                     LAST CHANGED 09 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87
      ...................................................
OUT OF SERVICE                                        MLML

DEP: 01 JAN 87 MOSS LANDING CA     CAYUSE NOT IN OPERATION DURING 1987
ARR: 31 DEC 87 MOSS LANDING CA     CONTACT POC FOR INFORMATION    365 DAY(S)
AREA INDEX: NP9
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             POINT SUR
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        POINT OF CONTACT INFORMATION (CHARACTERISTICS)

    POC:                        MR MICHAEL PRINCE
    POC OFFICE:                 MARINE OPERATIONS
    POC ORGANIZATION:           MOSS LANDING MARINE LABORATORY
    POC ADDRESS:                P.O. BOX 450
    POC CITY/STATE:             MOSS LANDING CA 95039
    FTS PREFIX:                 408
    COMMERCIAL AREA CODE:       408
    PHONE:                      633-3304
     -----------------------------------

           ADMINISTRATIVE DETAILS

    COMMON SHIP NAME:                PT SUR
    DESIGNATOR:                      CLASS D
    CLASS:                           COASTAL ZONE R/V
    CALL SIGN (INTERNATIONAL):       WRC2276
    FLEET:                           UNOLS
    SHIP TYPE:                       OCEAN RESEARCH - COASTAL ZONE
    SHIP OWNER:                      NATIONAL SCIENCE FOUNDATION
    CERTIFICATION AUTHORITY:         AMERICAN BUREAU OF SHIPPING
    FLAG REGISTRY:                   USA
    HOME PORT:                       MOSS LANDING CA USA
    TECHNICAL SPONSOR:               MOSS LANDING MARINE LABORATORY
    OPERATIONS CONTROL:              MOSS LANDING MARINE LABORATORY
    CONTRACTUAL INFORMATION:         NSF CHARTER PARTY AGREEMENT. EXPIRES 1989.
    OPERATING COST/DAY:                5.5/86                          THOUSAND $'S IN YR
    SCIENTIFIC COMPLEMENT:            12
    NUMBER OFFICERS:                  5
    NUMBER IN CREW:                     4
    MAX SEA STATE:                    7 BEAUFORT SCALE
    ENDURANCE:                        21 DAY(S)
    LIMITING FACTOR:                 DRY STORES
    BUILDER:                         ATLANTIC MARINE INC.
    WHERE BUILT:                     FORT GEORGE ISLAND FL
    INITIAL COST:                    3.0/81   MILLION $'S IN YEAR
    DUE DATE:                        '00
    KEEL DATE:                       15 JUN 80
    LAUNCH DATE:                     15 FEB 81
    DELIVERY DATE:                   20 MAY 81
    COMMISSION DATE:                 24 JUN 81
    CONVERSION DATE:                 '00
    LAST OVERHAUL:                   '83
    MAINTENANCE CYCLE:               1.0 YEARS
    END OF LIFE:                     2006
    UPDATE OF INFORMATION:           07 JAN 87
     -----------------------------------

         SHIP DIMENSIONS

    LENGTH:              135.0 FEET
    MAX BEAM:            32.0 FEET
    HEIGHT:               58.0 FEET
    GROSS TONNAGE:         294
    DISPLACEMENT:          539 TONS
    DRAUGHT:              9.0 FEET
    CRUISE SPEED:        11.0 KNOTS
    RANGE:                7680 NAUTICAL MILES
    MAX SPEED:           11.0 KNOTS
    MIN SPEED:            0.1 KNOTS
```

ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                 DIESEL
AUXILIARY PROPULSION:            N
NUMBER OF SHAFTS:                2
BOW THRUSTER:                    N
ACTIVE RUDDER:                   N
DYNAMIC POSITIONING:             N
ANTI-ROLL:                       N
STABILIZER:                      N
DEEP ANCHOR:                      3000 FEET
BERTHING VAN DIMENSIONS:         NONE
INSTRUMENT VAN DIMENSIONS:       8X8X10
WET-LAB:                         Y
DRY-LAB:                         Y
AMMUNITION STORAGE:              N
HELO SUPPORT:                    N
METEOROLOGICAL OBSERVATIONS:     N
UTILITY BOATS:
    1. 14 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:            20000 POUNDS
  NUMBER OF FRAMES:              2
CRANES OR BOOMS
  MAX HOIST CAPACITY:            16200 POUNDS
  NUMBER OF CRANES:              2
WINCHES:
    01. MAJOR TYPE/USE:          TRAWL
        SECONDARY TYPE/USE:      DREDGE
        SLIP-RINGS:              Y
        WIRE TYPE:               WIRE ROPE
        WIRE LENGTH:             30000 FEET
        WIRE DIAMETER:           0.500 INCHES
    02. MAJOR TYPE/USE:          HYDROGRAPHIC
        SECONDARY TYPE/USE:      STD
        SLIP-RINGS:              Y
        WIRE TYPE:               CONDUCTOR CABLE
        WIRE LENGTH:             15000 FEET
        WIRE DIAMETER:           0.250 INCHES
    C3. MAJOR TYPE/USE:          HYDROGRAPHIC
        SECONDARY TYPE/USE:      STD
        SLIP-RINGS:              Y
        WIRE TYPE:               WIRE ROPE
        WIRE LENGTH:             10000 FEET
        WIRE DIAMETER:           0.322 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                        -
FACSIMILE:                        Y
ELECTROMAGNETIC LOG:              -
INERTIAL NAVIGATION:              -
RADAR (SURFACE SCAN):             Y
LORAN A:                          -
LORAN C:                          Y
OMEGA:                            -
SATELLITE NAVIGATION:             Y
RADIO TELETYPE COMMUNICATION:     -
SINGLE SIDE BAND:                 Y
VHF COMMUNICATIONS:               Y
STABLE TABLE:                     -
NARROW BEAM:                      N
SEISMIC PROFILING:                Y
SIDE SCAN:                        -
SOUNDING SYSTEM (SHALLOW):        RAYTHEON
SOUNDING SYSTEM (DEEP):           RAYTHEON/EDO
```

FUEL DETAILS

```
  FUEL CAPACITY:                        29400 GALLONS
  FUEL TYPE:                                  MG-O
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:          1200 GAL/24-HRS
      DURING AVERAGE OPERATIONS:         1000 GAL/24-HRS
      DURING INPORT OPERATIONS:           100 GAL/24-HRS

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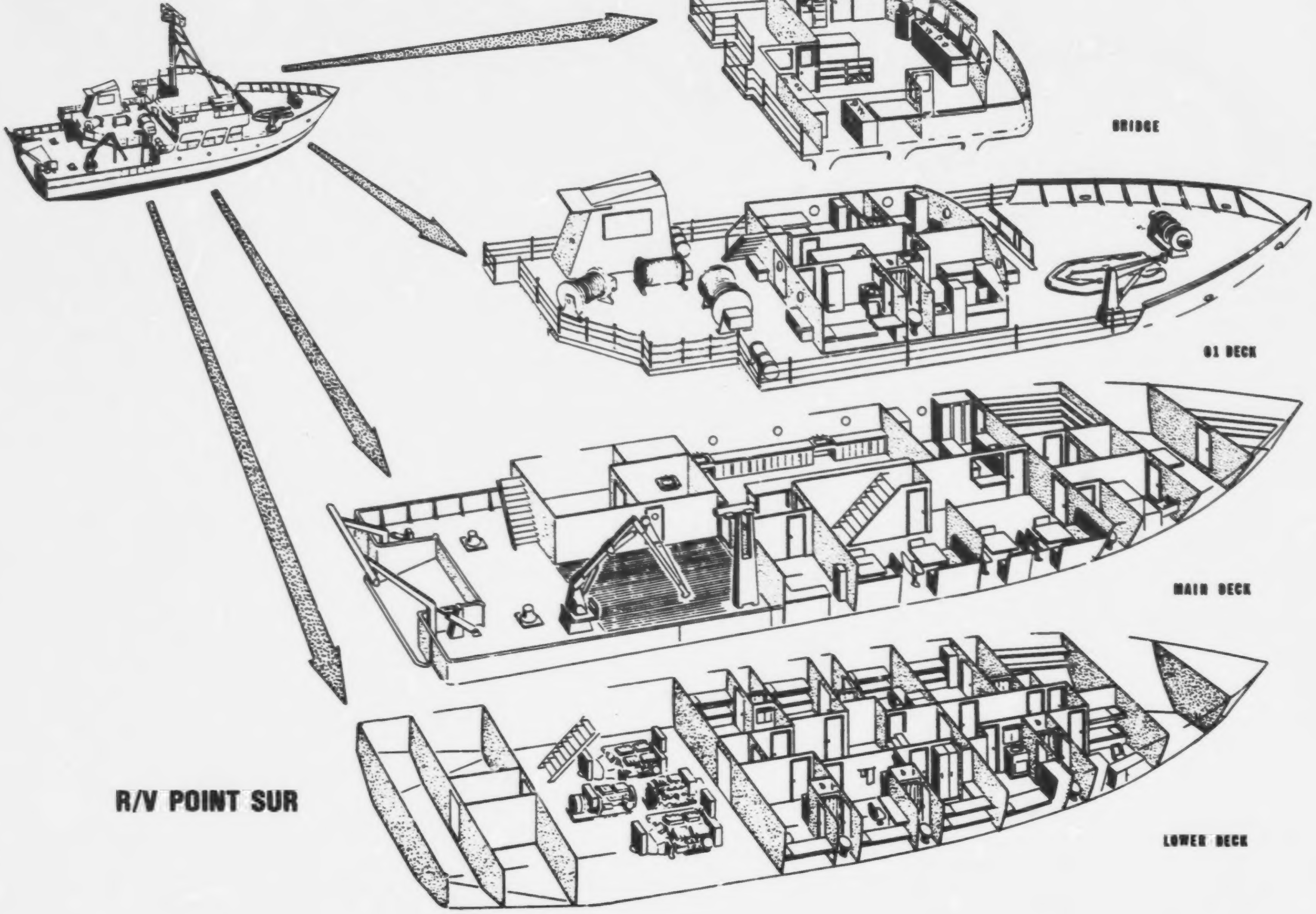
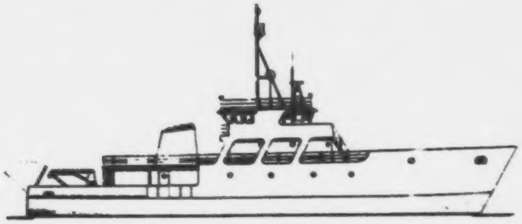
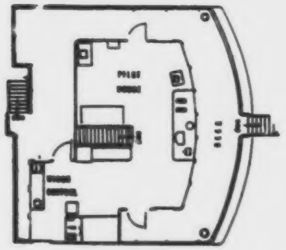
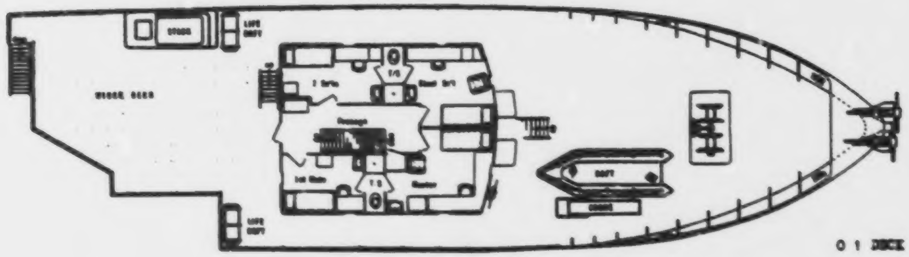

BRIDGE
01 DECK
MAIN DECK
LOWER DECK

R/V POINT SUR





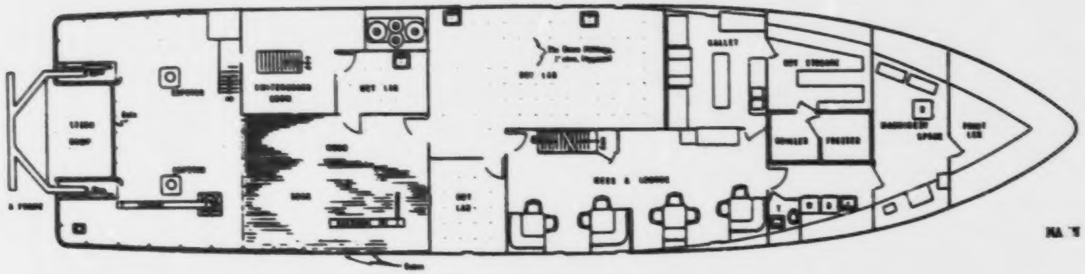
BRIDGE



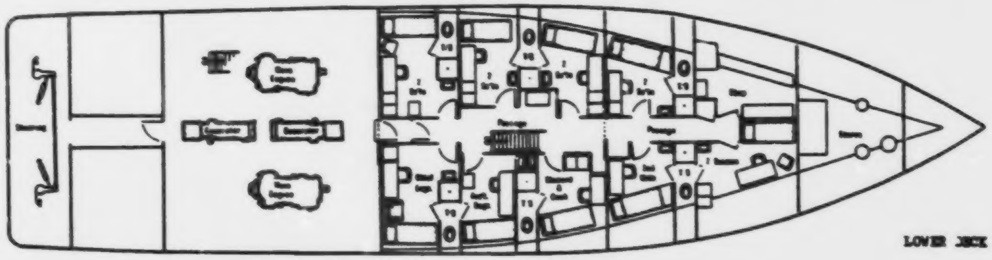
O 1 DECK

GENERAL DATA:

LENGTH OVERALL	135 feet
LENGTH BETWEEN PERPENDICULARS	124 feet
BEAM	32 feet
DRAFT (FULL LOAD)	9 feet
GROSS TONNAGE	294 tons
DISPLACEMENT (FULL LOAD)	539 light tons
MAXIMUM SUSTAINED SPEED	11.5 knots
MANEUVERING SPEED	0-10 knots
CRUISING RANGE (NORMAL)	5,600 n. miles
ENDURANCE (NORMAL)	21 days
LABORATORY AREA	DRY LAB 480 sq. ft. WET LAB 100 sq. ft.
MAIN DECK AREA	1100 sq. ft.
CREW	Nine
SCIENTIFIC BERTHING	Twelve
OWNER	National Science Foundation
OPERATOR	Moss Landing Marine Laboratories for CENCAL
BUILT	1980
HOME PORT	Moss Landing, California



MAIN DECK



LOWER DECK

R/V POINT SUR

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                 POINT SUR                 LAST CHANGED 21 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ........................................
OCEANOGRAPHIC RESEARCH           CHILDRESS              NSF

DEP: 05 JAN 87 MOSS LANDING                                        (F)
ARR: 17 JAN 87 MOSS LANDING        SANTA BARBARA                  13 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           MARTIN                 NSF

DEP: 21 JAN 87 MOSS LANDING                                        (F)
ARR: 04 FEB 87 MOSS LANDING        VERTEX                         15 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           DUNLAP                 NPS

DEP: 11 FEB 87 MOSS LANDING
ARR: 12 FEB 87 MOSS LANDING        SAN FRANCISCO BAY               2 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           SALERNO                CITY OF SF

DEP: 16 FEB 87 MOSS LANDING
ARR: 20 FEB 87 MOSS LANDING        SAN FRANCISCO BAY               5 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           STERNBERG              NSF

DEP: 23 FEB 87 MOSS LANDING                                        (F)
ARR: 28 FEB 87 MOSS LANDING        SAN FRANCISCO BAY               6 DAY(S)
AREA INDEX: NP9
      ........................................
OPEN

DEP: 01 MAR 87 MOSS LANDING
ARR: 15 MAR 87 MOSS LANDING        OPEN                           15 DAY(S)
AREA INDEX: OPEN
      ........................................
OCEANOGRAPHIC RESEARCH           MARTIN                 NSF

DEP: 16 MAR 87 MOSS LANDING
ARR: 20 MAR 87 MOSS LANDING        VERTEX                          5 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           MARTIN                 MLML

DEP: 23 MAR 87 MOSS LANDING
ARR: 27 MAR 87 MOSS LANDING        CLASS CRUISE                    5 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           ALLDREDGE  (UCSB)      NSF

DEP: 01 APR 87 MOSS LANDING                                        (F)
ARR: 12 APR 87 MOSS LANDING        POINT CONCEPTION               12 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           MARTIN                 NSF

DEP: 16 APR 87 MOSS LANDING                                        (F)
ARR: 30 APR 87 MOSS LANDING        VERTEX                         15 DAY(S)
AREA INDEX: NP9
      ........................................
OCEANOGRAPHIC RESEARCH           RAMP                   NPS
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```
DEP: 07 MAY 87 MOSS LANDING                                              (F)
ARR: 17 MAY 87 MOSS LANDING        CLASS CRUISE                       11 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           DUNLAP                 NPS

DEP: 19 MAY 87 MOSS LANDING                                              (F)
ARR: 22 MAY 87 MOSS LANDING        MONTEREY BAY                        4 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           MARTIN/JOHNSON         ONR

DEP: 26 MAY 87 MOSS LANDING
ARR: 04 JUN 87 MOSS LANDING                                           10 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           SALERNO                CITY OF SF

DEP: 08 JUN 87 MOSS LANDING                                              (F)
ARR: 12 JUN 87 MOSS LANDING        SAN FRANCISCO BAY                   5 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           RAMP                   NPS

DEP: 15 JUN 87 MOSS LANDING                                              (F)
ARR: 28 JUN 87 MOSS LANDING        RAMS, SQUIRTS AND JETS             14 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           DAVIDSON               NPS

DEP: 01 JUL 87 MOSS LANDING
ARR: 12 JUL 87 MOSS LANDING        SAN NICHOLAS ISLAND                12 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           MARTIN                 NSF

DEP: 20 JUL 87 MOSS LANDING                                              (F)
ARR: 03 AUG 87 MOSS LANDING        VERTEX                             15 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           DUNLAP                 NPS

DEP: 25 AUG 87 MOSS LANDING                                              (F)
ARR: 27 AUG 87 MOSS LANDING        MONTEREY BAY                        3 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           STANTON                NPS

DEP: 31 AUG 87 WOODS HOLE
ARR: 04 SEP 87 MOSS LANDING        MONTEREY BAY                        5 DAY(S)
AREA INDEX: NA6   NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           ALLDREDGE              NSF

DEP: 21 SEP 37 MOSS LANDING                                              (F)
ARR: 02 OCT 87 MOSS LANDING        POINT CONCEPTION                   12 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH                                  MLML

DEP: 05 OCT 87 MOSS LANDING
ARR: 09 OCT 87 MOSS LANDING        CLASS CRUISE                        5 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           SALERNO                CITY OF SF

DEP: 12 OCT 87 MOSS LANDING                                              (F)
ARR: 16 OCT 87 MOSS LANDING        SAN FRANCISCO BAY                   5 DAY(S)
AREA INDEX: NP9
                 . . . . . . . . . . . . . . . . . . . . . . . .
OCEANOGRAPHIC RESEARCH           MARTIN                 NSF
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```
DEP: 19 OCT 87 MOSS LANDING                                         (F)
ARR: 02 NOV 87 MOSS LANDING        VERTEX                          15 DAY(S)
AREA INDEX: NP9
      .........................................
OCEANOGRAPHIC RESEARCH           RAMP                   NPS

DEP: 05 NOV 87 MOSS LANDING                                         (F)
ARR: 15 NOV 87 MOSS LANDING        CLASS CRUISE                    11 DAY(S)
AREA INDEX: NP9
      .........................................
OCEANOGRAPHIC RESEARCH           DUNLAP                 NPS

DEP: 17 NOV 87 MOSS LANDING
ARR: 20 NOV 87 MOSS LANDING        MONTEREY BAY                     4 DAY(S)
AREA INDEX: NP9
      .........................................
OUT OF SERVICE

DEP: 01 DEC 87 MOSS LANDING
ARR: 31 DEC 87 MOSS LANDING        SHIPYARD & MAINTENANCE-INPORT   31 DAY(S)
AREA INDEX: NP9
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**********************************************************************
                 WECOMA
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       POINT OF CONTACT INFORMATION (CHARACTERISTICS)

    POC:                          CAPT K PALFREY
    POC OFFICE:                   MARINE SUPERINTENDENT
    POC ORGANIZATION:             OREGON STATE U.,COL. OF OCEANOGRAPHY
    POC ADDRESS:                  HATFIELD MARINE SCIENCE CENTER
    POC CITY/STATE:               NEWPORT OR  97365
    FTS PREFIX:                   503
    COMMERCIAL AREA CODE:         503
    PHONE:                        867-3011

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              ADMINISTRATIVE DETAILS

    DESIGNATOR:                        RV
    CLASS:                             OCEANUS
    CALL SIGN (INTERNATIONAL):         WSD7079
    FLEET:                             UNOLS
    SHIP TYPE:                         OCEAN RESEARCH-GENERAL
    SHIP OWNER:                        NSF
    CERTIFICATION AUTHORITY:           -
    FLAG REGISTRY:                     USA
    HOME PORT:                         NEWPORT OR
    TECHNICAL SPONSOR:                 OREGON STATE UNIVERSITY
    OPERATIONS CONTROL:                OREGON STATE UNIVERSITY
    CONTRACTUAL INFORMATION:           NONE
    OPERATING COST/DAY:                6.5/86                       THOUSAND $'S IN YR
    SCIENTIFIC COMPLEMENT:              20
    NUMBER OFFICERS:                    0
    NUMBER IN CREW:                      12
    MAX SEA STATE:                      6 BEAUFORT SCALE
    ENDURANCE:                          30 DAY(S)
    LIMITING FACTOR:                   FUEL
    BUILDER:                           PETERSON BUILDERS
    WHERE BUILT:                       USA
    INITIAL COST:                      3.1/75   MILLION $'S IN YEAR
    DUE DATE:                          '00
    KEEL DATE:                         '00
    LAUNCH DATE:                       '75
    DELIVERY DATE:                     '75
    COMMISSION DATE:                   15 MAY 76
    CONVERSION DATE:                   '00
    LAST OVERHAUL:                     '86
    MAINTENANCE CYCLE:                 2.0 YEARS
    END OF LIFE:                       2001
    UPDATE OF INFORMATION:             07 JAN 87

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            SHIP DIMENSIONS

    LENGTH:              177.0 FEET
    MAX BEAM:            22.0 FEET
    HEIGHT:              -      FEET
    GROSS TONNAGE:        289
    DISPLACEMENT:         1015 TONS
    DRAUGHT:             18.5 FEET
    CRUISE SPEED:        11.5 KNOTS
    RANGE:                5000 NAUTICAL MILES
    MAX SPEED:           14.5 KNOTS
    MIN SPEED:            1.0 KNOTS

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ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                  DIESEL GEARED
AUXILIARY PROPULSION:             NO
NUMBER OF SHAFTS:                 1
BOW THRUSTER:                     TRAINABLE
ACTIVE RUDDER:                    N
DYNAMIC POSITIONING:              N
ANTI-ROLL:                        N
STABILIZER:                       N
DEEP ANCHOR:                      NONE  FEET
BERTHING VAN DIMENSIONS:          NO
INSTRUMENT VAN DIMENSIONS:        20X8X8
WET-LAB:                          Y
DRY-LAB:                          Y
AMMUNITION STORAGE:               N
HELO SUPPORT:                     N
METEOROLOGICAL OBSERVATIONS:      SURFACE
UTILITY BOATS:
    1. 13 FOOT SKIFF
A, U, OR L FRAMES
  MAX HOIST CAPACITY:              7000 POUNDS
  NUMBER OF FRAMES:               2
CRANES OR BOOMS
  MAX HOIST CAPACITY:             30000 POUNDS
  NUMBER OF CRANES:               2
WINCHES:
    01. MAJOR TYPE/USE:           CORING
        SECONDARY TYPE/USE:       TRAWL
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:              30000 FEET
        WIRE DIAMETER:            0.500 INCHES
    02. MAJOR TYPE/USE:           TRAWL
        SECONDARY TYPE/USE:       HYDROGRAPHIC
        SLIP-RINGS:               4
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:              20000 FEET
        WIRE DIAMETER:            0.375 INCHES
        SECONDARY WIRE TYPE:      CONDUCTOR CABLE
        SECONDARY WIRE LEN:       25000 FEET
        SECONDARY WIRE DIAM:      0.225 INCHES
    03. MAJOR TYPE/USE:           HYDROGRAPHIC
        SECONDARY TYPE/USE:
        SLIP-RINGS:               4
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:              30000 FEET
        WIRE DIAMETER:            0.187 INCHES
        SECONDARY WIRE TYPE:      CONDUCTOR CABLE
        SECONDARY WIRE LEN:       25000 FEET
        SECONDARY WIRE DIAM:      0.225 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                          NONE
FACSIMILE:                          Y
ELECTROMAGNETIC LOG:                Y
INERTIAL NAVIGATION:                N
RADAR (SURFACE SCAN):               Y
LORAN A:                            N
LORAN C:                            Y
OMEGA:                              Y
SATELLITE NAVIGATION:               Y
RADIO TELETYPE COMMUNICATION:       N
SINGLE SIDE BAND:                   Y
VHF COMMUNICATIONS:                 Y
STABLE TABLE:                       N
NARROW BEAM:                        N
SEISMIC PROFILING:                  Y
SIDE SCAN:                          N
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 SOUNDING SYSTEM (SHALLOW):      JRC
 SOUNDING SYSTEM (DEEP):         EDO/RAYTHEON

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      FUEL DETAILS

 FUEL CAPACITY:                   56000 GALLONS
 FUEL TYPE:                             DIESEL #2/JP-5
 FUEL CONSUMPTION RATES:
     AT NORMAL CRUISING SPEED:     2000 GAL/24-HRS
     DURING AVERAGE OPERATIONS:    1800 GAL/24-HRS
     DURING INPORT OPERATIONS:        0 GAL/24-HRS

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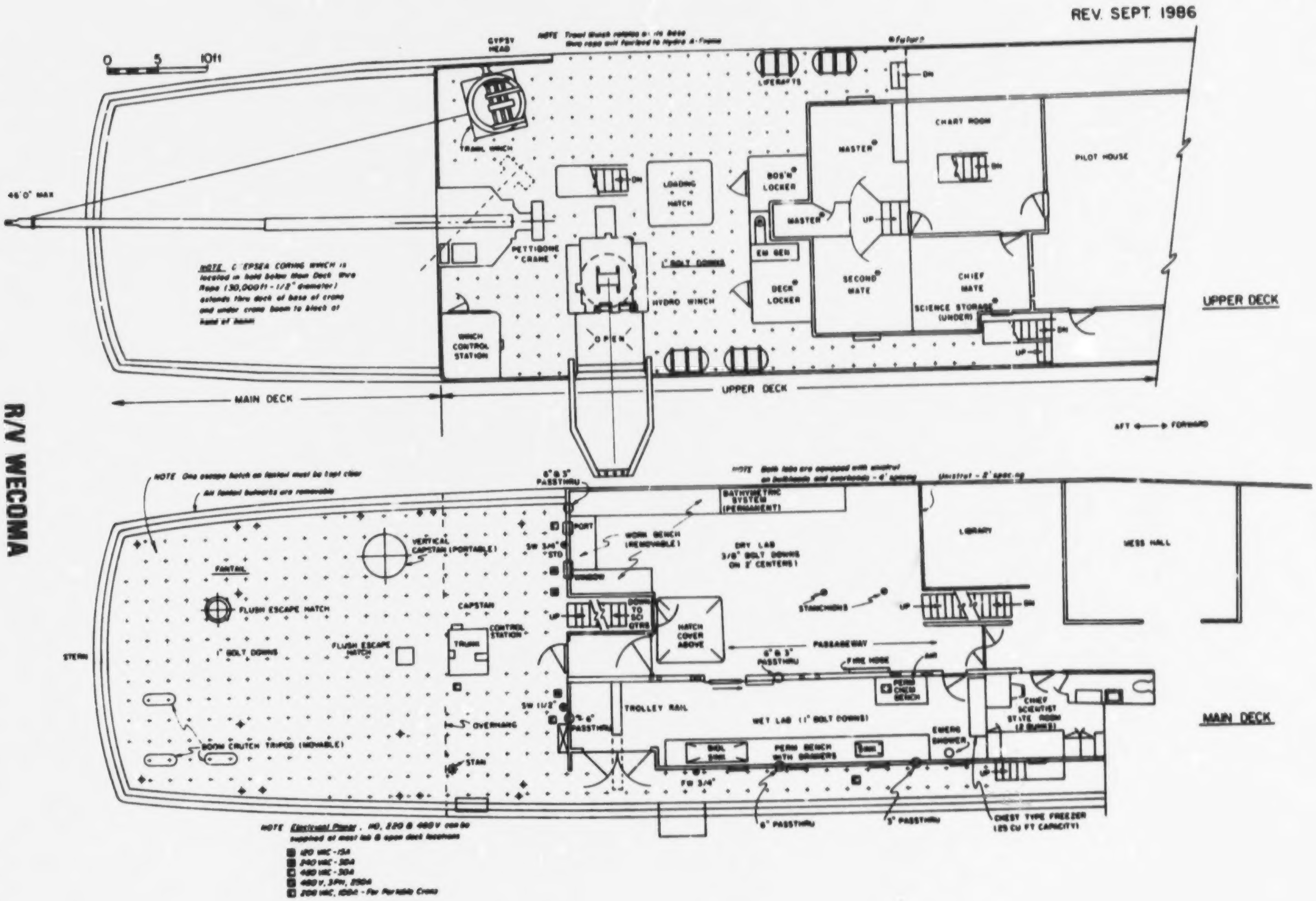
R/V WECOMA


REV. SEPT. 1986
0 5 10ft
GYPSY HEAD
NOTE Trawl Winch rotates on its base
Wire rope will fairlead to Hydro A-Frame
LIFERAFTS
DN
CHART ROOM
PILOT HOUSE
MASTER
BOS'N LOCKER
MASTER
UP
EM GEN
DECK LOCKER
SECOND MATE
CHIEF MATE
SCIENCE STORAGE (UNDER)
UP
TRAWL WINCH
LOADING HATCH
46'0" MAX
PETTIBONE "CRANE"
1" BOLT DOWNS
HYDRO WINCH
OPEN
WINCH CONTROL STATION
NOTE DEEPSEA CORING WINCH is located in hold below Main Deck. Wire Rope (30,000ft - 1/2" diameter) extends thru deck at base of crane and under crane boom to block at head of boom
MAIN DECK
UPPER DECK
UPPER DECK
AFT ⟷ FORWARD
NOTE One escape hatch on fantail must be kept clear
All fantail bulwarks are removable
6" & 3" PASSTHRU
NOTE Both labs are equipped with unistrut on bulkheads and overheads - 4' spacing
Unistrut - 2' spacing
BATHYMETRIC SYSTEM (PERMANENT)
PORT
SW 3/4" STD
WORK BENCH (REMOVABLE)
WINDOW
DRY LAB 3/8" BOLT DOWNS ON 2' CENTERS)
LIBRARY
MESS HALL
VERTICAL CAPSTAN (PORTABLE)
FANTAIL
FLUSH ESCAPE HATCH
CAPSTAN
CONTROL STATION
TRUNK
FLUSH ESCAPE HATCH
1" BOLT DOWNS
STERN
UP
DOWN TO SCI QTRS
HATCH COVER ABOVE
STANCHIONS
UP
DN
PASSAGEWAY
6" & 3" PASSTHRU
FIRE HOSE
AIR
PERM CHEM BENCH
CHIEF SCIENTIST STATE ROOM (2 BUNKS)
SW 1 1/2"
6" PASSTHRU
TROLLEY RAIL
WET LAB (1" BOLT DOWNS)
OVERHANG
BOOM CRUTCH TRIPOD (MOVABLE)
STAN
SINK
PERM BENCH WITH DRAWERS
SINK
EMERG SHOWER
UP
FW 3/4"
6" PASSTHRU
3" PASSTHRU
CHEST TYPE FREEZER (25 CU FT CAPACITY)
MAIN DECK
NOTE Electrical Power, 110, 220 & 460V can be supplied at most lab & open deck locations
120 VAC - 15A
240 VAC - 30A
480 VAC - 30A
480 V, 3PH, 250A
208 VAC, 100A - For Portable Crane

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                 WECOMA                    LAST CHANGED 21 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

       ........................................
OUT OF SERVICE                                         OSU

DEP: 01 JAN 87 NEWPORT
ARR: 13 JAN 87 NEWPORT             MAINTENANCE                     13 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH                                 NSF

DEP: 14 JAN 87 NEWPORT             VERTEX - SEASONAL            (F)
ARR: 31 JAN 87 NEWPORT             33N, 139W                       18 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH           WILSON                NSF

DEP: 03 FEB 87 NEWPORT                                          (F)
ARR: 06 FEB 87 NEWPORT             OFF NEWPORT                      4 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH           HUYER                 ONR

DEP: 18 FEB 87 NEWPORT                                          (F)
ARR: 25 FEB 87 SAN FRANCISCO       S. OREGON & N. CALIFORNIA        8 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH           CALDWELL/PAULSON      NSF

DEP: 28 FEB 87 SAN FRANCISCO                                    (F)
ARR: 30 MAR 87 PAPEETE                                             31 DAY(S)
AREA INDEX: NP9   SP2   NP12

DEP: 10 APR 87 PAPEETE             TROPIC HEAT
ARR: 18 MAY 87 SAN FRANCISCO       (VIA ACAPULCO & S. DIEGO)       39 DAY(S)
AREA INDEX: SP2   NP9   NP12
       ........................................
OCEANOGRAPHIC RESEARCH           HUYER                 ONR

DEP: 19 MAY 87 SAN FRANCISCO                                    (F)
ARR: 26 MAY 87 SAN FRANCISCO       S. OREGON & N. CALIF.            8 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH           CALDWELL/PAULSON      ONR

DEP: 27 MAY 87 SAN FRANCISCO                                    (F)
ARR: 05 JUN 87 NEWPORT             N. CALIFORNIA                   10 DAY(S)
AREA INDEX: NP9
       ........................................
OUT OF SERVICE

DEP: 06 JUN 87 NEWPORT             15-17 JUNE - MATERIAL CONDITION REVIEW
ARR: 23 JUN 87 NEWPORT             INPORT                          18 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH           HUYER/SMITH           ONR/NSF

DEP: 24 JUN 87 NEWPORT                                          (F)
ARR: 02 JUL 87 MONTEREY            S. OREGON & N. CALIF. 8/1        9 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH                                 NSF

DEP: 03 JUL 87 MONTEREY            VERTEX-NORTH/SOUTH GULF OF AK.(F)
ARR: 05 SEP 87 NEWPORT             IN MONT.3 SEP/7 DA KODIAK TBD   65 DAY(S)
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AREA INDEX: NP9
                  ..................................................
OCEANOGRAPHIC RESEARCH          PAULSON                    ONR

DEP: 14 SEP 87 NEWPORT            OCEAN STORMS                      (F)
ARR: 30 SEP 87 NEWPORT            48N, 138.5W                           17 DAY(S)
AREA INDEX: NP9

DEP: 05 OCT 87 NEWPORT            LARGE OCEAN STORMS                (F)
ARR: 14 OCT 87 NEWPORT            48N, 138.5W                           10 DAY(S)
AREA INDEX: NP9
                  ..................................................
OCEANOGRAPHIC RESEARCH                                     NSF

DEP: 15 OCT 87 NEWPORT            VERTEX - SEASONAL                 (F)
ARR: 05 NOV 87 NEWPORT            33N, 139W                             22 DAY(S)
AREA INDEX: NP9
                  ..................................................
OUT OF SERVICE                                             OSU

DEP: 06 NOV 87 NEWPORT
ARR: 31 DEC 87 NEWPORT            STRUCTURAL MODIFICATIONS              56 DAY(S)
AREA INDEX: NP9
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               ENDEAVOR
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     POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                           MR JOHN F BASH
  POC OFFICE:                    MARINE SUPERINTENDENT
  POC ORGANIZATION:              GRADUATE SCHOOL OF OCEANOGRAPHY
  POC ADDRESS:                   UNIVERSITY OF RHODE ISLAND
  POC CITY/STATE:                NARRAGANSETT RI 02882
  FTS PREFIX:                    401
  COMMERCIAL AREA CODE:          401
  PHONE:                         792-6203

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          ADMINISTRATIVE DETAILS

  DESIGNATOR:                         RV
  CLASS:                              OCEANUS
  CALL SIGN (INTERNATIONAL):          WVFQ
  FLEET:                              UNOLS
  SHIP TYPE:                          OCEAN RESEARCH-GENERAL
  SHIP OWNER:                         NSF
  CERTIFICATION AUTHORITY:            AMERICAN BUREAU OF SHIPPING
  FLAG REGISTRY:                      USA
  HOME PORT:                          NARRAGANSETT RI
  TECHNICAL SPONSOR:                  UNIV. OF RHODE ISLAND
  OPERATIONS CONTROL:                 UNIV. OF RHODE ISLAND
  CONTRACTUAL INFORMATION:            NONE
  OPERATING COST/DAY:                 7.9/87                    THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:               16
  NUMBER OFFICERS:                     6
  NUMBER IN CREW:                        6
  MAX SEA STATE:                       5 BEAUFORT SCALE
  ENDURANCE:                           30 DAY(S)
  LIMITING FACTOR:                    FUEL
  BUILDER:                            PETERSON BUILDERS INC
  WHERE BUILT:                        STURGEON BAY WI USA
  INITIAL COST:                       -
  DUE DATE:                           '00
  KEEL DATE:                          23 JAN 75
  LAUNCH DATE:                        06 SEP 75
  DELIVERY DATE:                      28 OCT 76
  COMMISSION DATE:                    '00
  CONVERSION DATE:                    '00
  LAST OVERHAUL:                      22 DEC 86
  MAINTENANCE CYCLE:                  2.0 YEARS
  END OF LIFE:                        2001
  UPDATE OF INFORMATION:              07 JAN 87

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        SHIP DIMENSIONS

  LENGTH:              177.0 FEET
  MAX BEAM:            33.0 FEET
  HEIGHT:               83.2 FEET
  GROSS TONNAGE:          293
  DISPLACEMENT:           972 TONS
  DRAUGHT:             17.6 FEET
  CRUISE SPEED:        12.0 KNOTS
  RANGE:                5540 NAUTICAL MILES
  MAX SPEED:           15.4 KNOTS
  MIN SPEED:            0.1 KNOTS

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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL GEARED
AUXILIARY PROPULSION: BOW THRUSTER
NUMBER OF SHAFTS: 1
BOW THRUSTER: TRAINABLE WATER JET
ACTIVE RUDDER: N
DYNAMIC POSITIONING: N
ANTI-ROLL: N
STABILIZER: N
DEEP ANCHOR: - FEET
BERTHING VAN DIMENSIONS: N
INSTRUMENT VAN DIMENSIONS: 8X8X20
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: Y
UTILITY BOATS:

1. 13 FOOT RUBBER INFLATABLE
2. 13 FOOT RUBBER INFLATABLE

A, U, OR L FRAMES
- MAX HOIST CAPACITY: 26000 POUNDS
- NUMBER OF FRAMES: 2

CRANES OR BOOMS
- MAX HOIST CAPACITY: 30000 POUNDS
- NUMBER OF CRANES: 1

WINCHES:

01. MAJOR TYPE/USE: CTD
    - SECONDARY TYPE/USE: UNKNOWN
    - SLIP-RINGS: 4
    - WIRE TYPE: CONDUCTOR CABLE
    - WIRE LENGTH: 22960 FEET
    - WIRE DIAMETER: 0.225 INCHES
    - SECONDARY WIRE TYPE: CONDUCTOR CABLE
    - SECONDARY WIRE LEN: 28540 FEET
    - SECONDARY WIRE DIAM: 0.182 INCHES
02. MAJOR TYPE/USE: HYDROGRAPHIC
    - SECONDARY TYPE/USE: CTD
    - SLIP-RINGS: 4
    - WIRE TYPE: WIRE ROPE
    - WIRE LENGTH: 30000 FEET
    - WIRE DIAMETER: 0.250 INCHES
    - SECONDARY WIRE TYPE: CONDUCTOR CABLE
    - SECONDARY WIRE LEN: 30000 FEET
    - SECONDARY WIRE DIAM: 0.322 INCHES
03. MAJOR TYPE/USE: DEEP SEA
    - SECONDARY TYPE/USE: TRAWL
    - SLIP-RINGS: 4
    - WIRE TYPE: CONDUCTOR CABLE
    - WIRE LENGTH: 36300 FEET
    - WIRE DIAMETER: 0.562 INCHES
    - SECONDARY WIRE TYPE: WIRE ROPE
    - SECONDARY WIRE LEN: 36300 FEET
    - SECONDARY WIRE DIAM: 0.625 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: HP-21MX
FACSIMILE: Y
ELECTROMAGNETIC LOG: N
INERTIAL NAVIGATION: N
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: Y
SATELLITE NAVIGATION: Y
RADIO TELETYPE COMMUNICATION: Y
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y

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STABLE TABLE:                       -
NARROW BEAM:                        -
SEISMIC PROFILING:                  Y
SIDE SCAN:                          N
SOUNDING SYSTEM (SHALLOW):          ROSS DS-1000
SOUNDING SYSTEM (DEEP):             RAYTHEON

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    FUEL DETAILS

FUEL CAPACITY:                     56000 GALLONS
FUEL TYPE:                               DIESEL #2
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:       2100 GAL/24-HRS
    DURING AVERAGE OPERATIONS:      1200 GAL/24-HRS
    DURING INPORT OPERATIONS:        600 GAL/24-HRS

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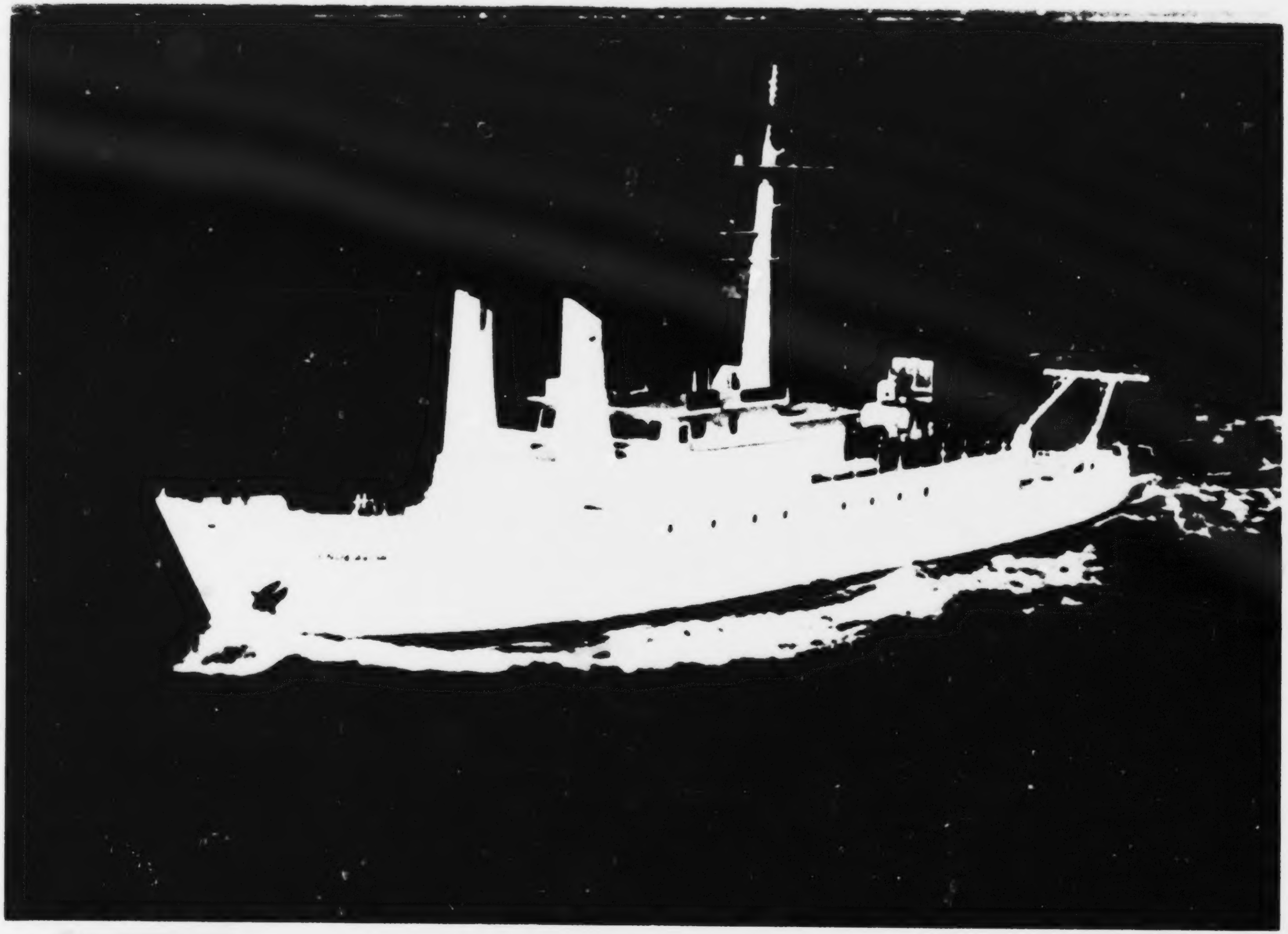

R/V ENDEAVOR

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                 ENDEAVOR                  LAST CHANGED 21 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      .........................................
OUT OF SERVICE

DEP: 01 JAN 87 NARRAGANSETT
ARR: 26 JAN 87 NARRAGANSETT                                        26 DAY(S)
AREA INDEX: NA6
      .........................................
TRANSIT                                                 NSF

DEP: 27 JAN 87 NARRAGANSETT
ARR: 31 JAN 87 MIAMI               TRANSIT                          5 DAY(S)
AREA INDEX: NA6   NA9
      .........................................
OCEANOGRAPHIC RESEARCH           SANFORD                NSF

DEP: 02 FEB 87 MIAMI
ARR: 22 FEB 87 NARRAGANSETT        W. N. ATLANTIC                  21 DAY(S)
AREA INDEX: NA9   NA6
      .........................................
OCEANOGRAPHIC RESEARCH           WATTS                  ONR/NSF

DEP: 27 FEB 87 NARRAGANSETT                                        (F)
ARR: 08 MAR 87 NARRAGANSETT        HATTERAS        7/3             10 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANGRAPHIC RESEARCH            BROWN (UNH)            NSF

DEP: 20 MAR 87 NARRAGANSETT
ARR: 08 APR 87 PORTLAND            GULF OF MAINE                   20 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           CAMMEN                 NSF

DEP: 11 APR 87 PORTLAND                                            (F)
ARR: 15 APR 87 NARRAGANSETT        GULF OF MAINE                    5 DAY(S)
AREA INDEX: NA6
      .........................................
OPEN

DEP: 18 APR 87 NARRAGANSETT
ARR: 29 APR 87 NARRAGANSETT        OPEN                            12 DAY(S)
AREA INDEX: OPEN
      .........................................
OCEANOGRAPHIC RESEARCH           CAMMEN                 NSF

DEP: 01 MAY 87 NARRAGANSETT
ARR: 07 MAY 87 NARRAGANSETT        GULF OF MAINE                    7 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           MARRA/SWIFT            ONR

DEP: 10 MAY 87 NARRAGANSETT                                        (F)
ARR: 28 MAY 87 NARRAGANSETT        W. NO. ATLANTIC                 19 DAY(S)
AREA INDEX: NA6
      .........................................
OPEN

DEP: 01 JUN 87 NARRAGANSETT
ARR: 19 JUN 87 NARRAGANSETT        OPEN                            19 DAY(S)
AREA INDEX: OPEN
      .........................................
OUT OF SERVICE                                          URI
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DEP: 20 JUN 87 NARRAGANSETT
ARR: 09 JUL 87 NARRAGANSETT        MAINTENANCE                     20 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           COLWELL/GRIMES         NSF

DEP: 10 JUL 87 NARRAGANSETT
ARR: 24 JUL 87 NARRAGANSETT        W. NO. ATLANTIC                 15 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           BROWN (UNH)            NSF

DEP: 28 JUL 87 NARRAGANSETT
ARR: 10 AUG 87 NARRAGANSETT        GULF OF MEXICO                  14 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           SWIFT/CASE             ONR

DEP: 15 AUG 87 NARRAGANSETT                                        (F)
ARR: 31 AUG 87 NARRAGANSETT        W. NO. ATLANTIC                 17 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           BROWN (UNH)            NSF

DEP: 03 SEP 87 NARRAGANSETT
ARR: 16 SEP 87 NARRAGANSETT        GULF OF MAINE                   14 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           ROSSBY                 ONR

DEP: 22 SEP 87 NARRAGANSETT                                        (F)
ARR: 05 OCT 87 NARRAGANSETT        W. NO. ATLANTIC                 14 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           WATTS/BANE             NSF/ONR

DEP: 09 OCT 87 NARRAGANSETT
ARR: 29 OCT 87 NARRAGANSETT        HATTERAS        11/10           21 DAY(S)
AREA INDEX: NA6
      .........................................
OUT OF SERVICE                                          URI

DEP: 30 OCT 87 NARRAGANSETT
ARR: 31 DEC 87 NARRAGANSETT        MAINTENANCE                     63 DAY(S)
AREA INDEX: NA6
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               MELVILLE
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           POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                         DR. GEORGE SHOR JR
  POC OFFICE:                  ASSOCIATE DIRECTOR
  POC ORGANIZATION:            SCRIPPS INSTITUTION OF OCEANOGRAPHY
  POC ADDRESS:                 UCSD - A-010
  POC CITY/STATE:              LA JOLLA CA  92093
  FTS PREFIX:                  619
  COMMERCIAL AREA CODE:        619
  PHONE:                       534-2853

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              ADMINISTRATIVE DETAILS

  DESIGNATOR:                         AGOR 14
  CLASS:                              MELVILLE/AGOR 14
  CALL SIGN (INTERNATIONAL):          WECB
  FLEET:                              UNOLS
  SHIP TYPE:                          OCEAN RESEARCH-GENERAL
  SHIP OWNER:                         USN
  CERTIFICATION AUTHORITY:            US COAST GUARD-ABS
  FLAG REGISTRY:                      USA
  HOME PORT:                          SAN DIEGO CA
  TECHNICAL SPONSOR:                  UNIV. OF CALIFORNIA SAN DIEGO
  OPERATIONS CONTROL:                 UNIV. OF CALIFORNIA SAN DIEGO
  CONTRACTUAL INFORMATION:            ONR CODE 611 LEASE TO EXPIRE 27 JUL 91 CONTR -
                                      # N00014-81-L-0659
  OPERATING COST/DAY:                 12.0/87                        THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:               39
  NUMBER OFFICERS:                     9
  NUMBER IN CREW:                       14
  MAX SEA STATE:                         BEAUFORT SCALE
  ENDURANCE:                           40 DAY(S)
  LIMITING FACTOR:                    FUEL
  BUILDER:                            DEFOE SHIPBUILDING COMPANY
  WHERE BUILT:                        BAY CITY MI USA
  INITIAL COST:                       6.0/69   MILLION $'S IN YEAR
  DUE DATE:                           '00
  KEEL DATE:                          12 JUL 67
  LAUNCH DATE:                        10 JUL 68
  DELIVERY DATE:                      01 SEP 69
  COMMISSION DATE:                    27 AUG 69
  CONVERSION DATE:                    '00
  LAST OVERHAUL:                      01 JUL 84
  MAINTENANCE CYCLE:                  2.0 YEARS
  END OF LIFE:                        1999
  UPDATE OF INFORMATION:              07 JAN 87

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            SHIP DIMENSIONS

  LENGTH:               245.0 FEET
  MAX BEAM:             46.0 FEET
  HEIGHT:               112.0 FEET
  GROSS TONNAGE:         1806
  DISPLACEMENT:          2075 TONS
  DRAUGHT:              16.0 FEET
  CRUISE SPEED:         10.0 KNOTS
  RANGE:                 8000 NAUTICAL MILES
  MAX SPEED:            12.5 KNOTS
  MIN SPEED:             0.0 KNOTS
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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: CYCLOIDAL PROP
AUXILIARY PROPULSION: CYCLOIDAL PROP FWD
NUMBER OF SHAFTS: 2
BOW THRUSTER: NO, CYCLOIDAL PROP FWD
ACTIVE RUDDER: N
DYNAMIC POSITIONING: Y
ANTI-ROLL: N
STABILIZER: N
DEEP ANCHOR: NONE FEET
BERTHING VAN DIMENSIONS: 8X8X20
INSTRUMENT VAN DIMENSIONS: 8X8X20
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: NO
UTILITY BOATS:
1. 14 FOOT RUBBER INFLATABLE
2. 14 FOOT BOSTON WHALER

A, U, OR L FRAMES
MAX HOIST CAPACITY: 20000 POUNDS
NUMBER OF FRAMES: 2

CRANES OR BOOMS
MAX HOIST CAPACITY: 25000 POUNDS
NUMBER OF CRANES: 2

WINCHES:

01. MAJOR TYPE/USE: TRAWL
SECONDARY TYPE/USE: DEEP SEA
SLIP-RINGS: Y
WIRE TYPE: WIRE ROPE
WIRE LENGTH: 45000 FEET
WIRE DIAMETER: 0.563 INCHES
SECONDARY WIRE TYPE: WIRE ROPE
SECONDARY WIRE LEN: 45000 FEET
SECONDARY WIRE DIAM: 0.680 INCHES

02. MAJOR TYPE/USE: HYDROGRAPHIC
SECONDARY TYPE/USE: STD
SLIP-RINGS: 1
WIRE TYPE: WIRE ROPE
WIRE LENGTH: 25000 FEET
WIRE DIAMETER: 0.250 INCHES
SECONDARY WIRE TYPE: WIRE ROPE
SECONDARY WIRE LEN: 25000 FEET
SECONDARY WIRE DIAM: 0.225 INCHES

03. MAJOR TYPE/USE: STD
SECONDARY TYPE/USE: HYDROGRAPHIC
SLIP-RINGS: 1
WIRE TYPE: WIRE ROPE
WIRE LENGTH: 30000 FEET
WIRE DIAMETER: 0.322 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: VAX - 730 (2)
FACSIMILE: Y
ELECTROMAGNETIC LOG: Y
INERTIAL NAVIGATION: N
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: N
SATELLITE NAVIGATION: Y
RADIO TELETYPE COMMUNICATION: Y
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y
STABLE TABLE: N
NARROW BEAM: N
SEISMIC PROFILING: Y

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SIDE SCAN:                         N
SOUNDING SYSTEM (SHALLOW):         FURUNO
SOUNDING SYSTEM (DEEP):            EDO,GIFFT

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      FUEL DETAILS

FUEL CAPACITY:                     105000 GALLONS
FUEL TYPE:                                DIESEL #1/DIESEL #2
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:        2800 GAL/24-HRS
    DURING AVERAGE OPERATIONS:       2000 GAL/24-HRS
    DURING INPORT OPERATIONS:         350 GAL/24-HRS

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R/V MELVILLE

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                MELVILLE                 LAST CHANGED 21 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87
      .......................................
OCEANOGRAPHIC                   BENDER (URI)          NSF

DEP: 02 JAN 87 SAN DIEGO CA
ARR: 08 FEB 87 PAPEETE TAHITI     15N TO 15S @ 135-00W           38 DAY(S)
AREA INDEX: SP2   SP3   NP12  NP9
      .......................................
OCEANOGRAPHIC RESEARCH          CRAIG                 NSF

DEP: 13 FEB 87 PAPEETE TAHITI
ARR: 17 MAR 87 HONOLULU           20S TO 20N @ 140W              33 DAY(S)
AREA INDEX: SP2   NP12
      .......................................
OCEANOGRAPHIC RESEARCH          SPIESS/DORMAN         NSF/NAVY/UC

DEP: 06 APR 87 HONOLULU           THRUSTER TESTS/OBS STUDIES
ARR: 23 APR 87 SAN DIEGO                          8/6/4          18 DAY(S)
AREA INDEX: NP9   NP12
      .......................................
OCEANOGRAPHIC RESEARCH          WORCESTER             NSF/NAVY

DEP: 28 APR 87 SAN DIEGO          ADIOS                           (F)
ARR: 27 MAY 87 HONOLULU           NO. HAWAII      20/11          30 DAY(S)
AREA INDEX: NP9   NP12
      .......................................
OCEANOGRAPHIC RESEARCH          SMITH/WILLIAMS        NSF

DEP: 31 MAY 87 HONOLULU           BENTHIC BIOLOGY                 (F)
ARR: 09 JUL 87 SAN DIEGO          NO. HAWAII                     40 DAY(S)
AREA INDEX: NP12  NP9
      .......................................
OCEANOGRAPHIC RESEARCH          DELANEY/SPIESS        NSF

DEP: 19 JUL 87 SAN DIEGO          DEEP TOW                        (S)
ARR: 12 AUG 87 SAN DIEGO          BLANCO TROUGH                  25 DAY(S)
AREA INDEX: NP9
      .......................................
OCEANOGRAPHIC RESEARCH          CRAIG/SHELTEMA        NSF

DEP: 17 SEP 87 SAN DIEGO                                          (F)
ARR: 17 OCT 87 PAPEETE            140W-20S-20N                   31 DAY(S)
AREA INDEX: NP9   SP2   NP12
      .......................................
OCEANOGRAPHIC RESEARCH          RISER (UW)            NSF

DEP: 22 OCT 87 PAPEETE            GEOCHEMISTRY
ARR: 24 NOV 87 EASTER IS.         5-25 S 110-140W (WEST PORTION)  34 DAY(S)
AREA INDEX: SP2   SP3
      .......................................
OCEANOGRAPHIC RESEARCH          RISER (UW)

DEP: 27 NOV 87 EASTER IS.         GEOCHEMISTRY
ARR: 17 DEC 87 EASTER IS.         5-25 S 110-140W (EAST PORTION)  21 DAY(S)
AREA INDEX: SP3
      .......................................
TRANSIT                                               NSF/DPP

DEP: 19 DEC 87 EASTER IS.
ARR: 29 DEC 87 PUNTARENAS         ALT ARR.,ACAPULCO   11/2.       11 DAY(S)
AREA INDEX: SP3   NP13
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               NEW HORIZON
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

   POC:                          DR. GEORGE SHOR JR
   POC OFFICE:                   ASSOCIATE DIRECTOR
   POC ORGANIZATION:             SCRIPPS INSTITUTION OF OCEANOGRAPHY
   POC ADDRESS:                  UCSD - A-010
   POC CITY/STATE:               LA JOLLA CA  92093
   FTS PREFIX:                   619
   COMMERCIAL AREA CODE:         619
   PHONE:                        534-2853

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             ADMINISTRATIVE DETAILS

   SHORT NAME:                        HORIZON
   DESIGNATOR:                        RV
   CLASS:                             COLUMBUS ISELIN
   CALL SIGN (INTERNATIONAL):         WYA4674
   FLEET:                             UNOLS
   SHIP TYPE:                         OCEANOGRAPHIC RESEARCH-GENERAL
   SHIP OWNER:                        UNIV. OF CALIFORNIA
   CERTIFICATION AUTHORITY:           AMERICAN BUREAU OF SHIPPING
   FLAG REGISTRY:                     USA
   HOME PORT:                         SAN DIEGO CA
   TECHNICAL SPONSOR:                 UNIV. OF CALIFORNIA SAN DIEGO
   OPERATIONS CONTROL:                UNIV. OF CALIFORNIA SAN DIEGO
   CONTRACTUAL INFORMATION:           NONE
   OPERATING COST/DAY:                7.0/87                        THOUSAND $'S IN YR
   SCIENTIFIC COMPLEMENT:              13
   NUMBER OFFICERS:                    5
   NUMBER IN CREW:                       7
   MAX SEA STATE:                        BEAUFORT SCALE
   ENDURANCE:                          29 DAY(S)
   LIMITING FACTOR:                   FUEL
   BUILDER:                           ATLANTIC MARINE INC
   WHERE BUILT:                       FORT GEORGE ISLAND FL US
   INITIAL COST:                      4.2/78   MILLION $'S IN YEAR
   DUE DATE:                          '00
   KEEL DATE:                         07 OCT 77
   LAUNCH DATE:                       04 MAR 78
   DELIVERY DATE:                     24 OCT 78
   COMMISSION DATE:                   25 JAN 79
   CONVERSION DATE:                   '00
   LAST OVERHAUL:                     01 JAN 83
   MAINTENANCE CYCLE:                 3.0 YEARS
   END OF LIFE:                       2005
   UPDATE OF INFORMATION:             07 JAN 87

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           SHIP DIMENSIONS

   LENGTH:                 170.0 FEET
   MAX BEAM:               36.0 FEET
   HEIGHT:                  72.0 FEET
   GROSS TONNAGE:            295
   DISPLACEMENT:            1080 TONS
   DRAUGHT:                12.8 FEET
   CRUISE SPEED:           10.0 KNOTS
   RANGE:                   7500 NAUTICAL MILES
   MAX SPEED:              12.3 KNOTS
   MIN SPEED:               0.0 KNOTS
```

ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                 DIESEL
AUXILIARY PROPULSION:            BOW THRUSTER
NUMBER OF SHAFTS:                2
BOW THRUSTER:                    SCHOTTEL TRAINABLE PROP
ACTIVE RUDDER:                   N
DYNAMIC POSITIONING:             N
ANTI-ROLL:                       N
STABILIZER:                      N
DEEP ANCHOR:                     NONE  FEET
BERTHING VAN DIMENSIONS:         8X8X14
INSTRUMENT VAN DIMENSIONS:       8X8X20
WET-LAB:                         Y
DRY-LAB:                         Y
AMMUNITION STORAGE:              N
HELO SUPPORT:                    N
METEOROLOGICAL OBSERVATIONS:     NO
UTILITY BOATS:
    1. 14 FOOT RUBBER INFLATABLE
    2. 14 FOOT BOSTON WHALER
A, U, OR L FRAMES
  MAX HOIST CAPACITY:            10000 POUNDS
  NUMBER OF FRAMES:              1
CRANES OR BOOMS
  MAX HOIST CAPACITY:             8000 POUNDS
  NUMBER OF CRANES:              2
WINCHES:
    01. MAJOR TYPE/USE:          TRAWL
        SECONDARY TYPE/USE:      DREDGE
        SLIP-RINGS:              1
        WIRE TYPE:               WIRE ROPE
        WIRE LENGTH:             30170 FEET
        WIRE DIAMETER:           0.500 INCHES
    02. MAJOR TYPE/USE:          HYDROGRAPHIC
        SECONDARY TYPE/USE:      STD
        SLIP-RINGS:              1
        WIRE TYPE:               WIRE ROPE
        WIRE LENGTH:             25150 FEET
        WIRE DIAMETER:           0.250 INCHES
        SECONDARY WIRE TYPE:     WIRE ROPE
        SECONDARY WIRE LEN:      25000 FEET
        SECONDARY WIRE DIAM:     0.225 INCHES
    03. MAJOR TYPE/USE:          CTD
        SECONDARY TYPE/USE:      CTD
        SLIP-RINGS:              1
        WIRE TYPE:               CONDUCTOR CABLE
        WIRE LENGTH:             32810 FEET
        WIRE DIAMETER:           0.322 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                          OPT. HP85 WITH SAIL
FACSIMILE:                          Y
ELECTROMAGNETIC LOG:                Y
INERTIAL NAVIGATION:                N
RADAR (SURFACE SCAN):               Y
LORAN A:                            N
LORAN C:                            Y
OMEGA:                              N
SATELLITE NAVIGATION:               Y
RADIO TELETYPE COMMUNICATION:       N
SINGLE SIDE BAND:                   Y
VHF COMMUNICATIONS:                 Y
STABLE TABLE:                       N
NARROW BEAM:                        N
SEISMIC PROFILING:                  N
SIDE SCAN:                          N
SOUNDING SYSTEM (SHALLOW):          FURUNO
SOUNDING SYSTEM (DEEP):             EDO
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      FUEL DETAILS

 FUEL CAPACITY:                        50000 GALLONS
 FUEL TYPE:                                  DIESEL #2
 FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:         1000 GAL/24-HRS
      DURING AVERAGE OPERATIONS:         850 GAL/24-HRS
      DURING INPORT OPERATIONS:          300 GAL/24-HRS

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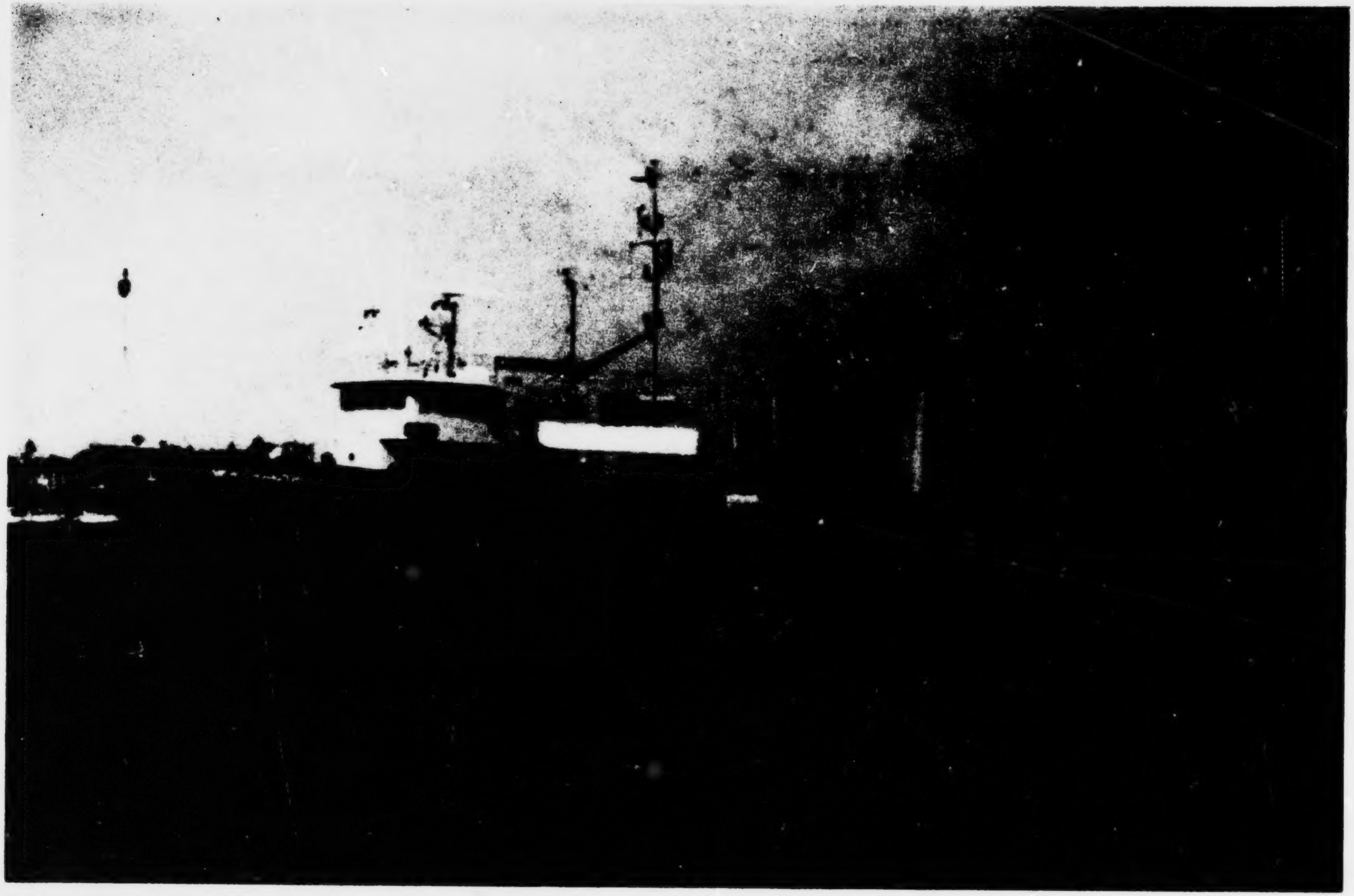

R/V NEW HORIZON

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                NEW HORIZON                 LAST CHANGED 28 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

..................................................................
OUT OF SERVICE                                             SIO

DEP: 01 JAN 87 SAN DIEGO
ARR: 28 FEB 87 SAN DIEGO        OVERHAUL                                 59 DAY(S)
AREA INDEX: NP9
..................................................................
OCEANOGRAPHIC RESEARCH          PIEPER (USC)               NSF

DEP: 02 MAR 87 SAN DIEGO                                                  (F)
ARR: 16 MAR 87 SAN DIEGO        BIOLOGY                                  15 DAY(S)
AREA INDEX: NP9
..................................................................
OCEANOGRAPHIC RESEARCH          HAMMOND/LUND (USC)         NSF

DEP: 19 MAR 87 SAN DIEGO                                                  (F)
ARR: 28 MAR 87 SAN DIEGO        GEOLOGY                                  10 DAY(S)
AREA INDEX: NP9
..................................................................
OCEANOGRAPHIC RESEARCH          JACKSON/LEDWELL            DOE/NSF

DEP: 31 MAR 87 SAN DIEGO                                                  (F)
ARR: 15 APR 87 SAN DIEGO        BIOLOGY          14/2                    16 DAY(S)
AREA INDEX: NP9
..................................................................
OCEANOGRAPHIC RESEARCH          SMITH                      NSF

DEP: 19 APR 87 SAN DIEGO
ARR: 26 APR 87 SAN DIEGO        BENTHIC BIOLOGY                           8 DAY(S)
AREA INDEX: NP9
..................................................................
OCEANOGRAPHIC RESEARCH          HAYWARD                    NAVY/UC

DEP: 01 MAY 87 SAN DIEGO        SQUIRTS & JETS                            (F)
ARR: 26 MAY 87 SAN DIEGO        CALIFORNIA CURRENT 14/12                 26 DAY(S)
AREA INDEX: NP9
..................................................................
OCEANOGRAPHIC RESEARCH          FILLOUX/CHAVE              NSF

DEP: 08 JUN 87 SAN DIEGO                                                  (F)
ARR: 09 JUL 87 HONOLULU         NE PACIFIC                               32 DAY(S)
AREA INDEX: NP9   NP12
..................................................................
OCEANOGRAPHIC RESEARCH          CHILDRESS                  NSF

DEP: 12 JUL 87 HONOLULU                                                   (F)
ARR: 03 AUG 87 HONOLULU         BIOLOGY-TRAWLING                         23 DAY(S)
AREA INDEX: NP12
..................................................................
OCEANOGRAPHIC RESEARCH          TSUJI                      NSF

DEP: 06 AUG 87 HONOLULU                                                   (F)
ARR: 18 AUG 87 HILO             BIOLOGY-TRAWLING                         13 DAY(S)
AREA INDEX: NP12
..................................................................
TRANSIT                                                    NSF

DEP: 19 AUG 87 HILO
ARR: 28 AUG 87 SAN DIEGO                                                 10 DAY(S)
AREA INDEX: NP12  NP9
..................................................................
OCEANOGRAPHIC RESEARCH          CALCOFI                    UC
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DEP: 04 SEP 87 SAN DIEGO
ARR: 19 SEP 87 SAN DIEGO                                                        (F)
AREA INDEX: NP9                    CALIFORNIA CURRENT                    16 DAY(S)
                  .....................................
OCEANOGRAPHIC RESEARCH            CARLUCCI/JAHNKE         NSF

DEP: 22 SEP 87 SAN DIEGO
ARR: 29 SEP 87 SAN DIEGO                                                        (F)
AREA INDEX: NP9                    BIOLOGY/BOTTOM LANDER                  8 DAY(S)
                  .....................................
OCEANOGRAPHIC RESEARCH            CHILDRESS               NSF

DEP: 01 OCT 87 SAN DIEGO
ARR: 05 OCT 87 SAN DIEGO
AREA INDEX: NP9                                                           5 DAY(S)
                  .....................................
OCEANOGRAPHIC RESEARCH            WILLIAMS/WARD           DOE/NASA

DEP: 08 OCT 87 SAN DIEGO            BIOLOGY
ARR: 23 OCT 87 SAN DIEGO            FOOD CHAIN       14/2                       (F)
AREA INDEX: NP9                                                          16 DAY(S)
                  .....................................
OCEANOGRAPHIC RESEARCH            REIMERS                 NSF

DEP: 26 OCT 87 SAN DIEGO
ARR: 10 NOV 87 SAN DIEGO                                                        (S)
AREA INDEX: NP9                     GEOCHEMISTRY                         16 DAY(S)
                  .....................................
OCEANOGRAPHIC RESEARCH            JAHNKE                  NSF

DEP: 10 NOV 87 SAN DIEGO
ARR: 24 NOV 87 SAN DIEGO                                                        (S)
AREA INDEX: NP9                     BOTTOM LANDER                        15 DAY(S)
                  .....................................
OCEANOGRAPHIC RESEARCH            LEDWELL (LDGO)          NSF

DEP: 30 NOV 87 SAN DIEGO
ARR: 06 DEC 87 SAN DIEGO                                                        (S)
AREA INDEX: NP9                     TRACERS                               7 DAY(S)
                  .....................................
OCEANOGRAPHIC RESEARCH            CALCOFI                 UC

DEP: 08 DEC 87 SAN DIEGO
ARR: 23 DEC 87 SAN DIEGO                                                        (F)
AREA INDEX: NP9                    CALIFORNIA CURRENT                    16 DAY(S)
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               THOMAS WASHINGTON
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                     DR. GEORGE SHOR JR
  POC OFFICE:              ASSOCIATE DIRECTOR
  POC ORGANIZATION:        SCRIPPS INSTITUTION OF OCEANOGRAPHY
  POC ADDRESS:             UCSD - A-010
  POC CITY/STATE:          LA JOLLA CA  92093
  FTS PREFIX:              619
  COMMERCIAL AREA CODE:    619
  PHONE:                   534-2853

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           ADMINISTRATIVE DETAILS

  COMMON SHIP NAME:             WASHINGTON
  DESIGNATOR:                   AGOR 10
  CLASS:                        ROBERT D CONRAD/AGOR 3
  CALL SIGN (INTERNATIONAL):    KGWU
  FLEET:                        UNOLS
  SHIP TYPE:                    OCEAN RESEARCH-GENERAL
  SHIP OWNER:                   USN
  CERTIFICATION AUTHORITY:      US COAST GUARD-ABS
  FLAG REGISTRY:                USA
  HOME PORT:                    SAN DIEGO CA
  TECHNICAL SPONSOR:            UNIV. OF CALIFORNIA SAN DIEGO
  OPERATIONS CONTROL:           UNIV. OF CALIFORNIA SAN DIEGO
  CONTRACTUAL INFORMATION:      ONR CODE 611 LEASE TO EXPIRE 28 SEP 90 CONTR -
                                # N00014-85-L-0737
  OPERATING COST/DAY:           12.0/87                 THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:         22
  NUMBER OFFICERS:               8
  NUMBER IN CREW:                 15
  MAX SEA STATE:                   BEAUFORT SCALE
  ENDURANCE:                     35 DAY(S)
  LIMITING FACTOR:              FUEL
  BUILDER:                      MARINETTE MARINE CORPORATION
  WHERE BUILT:                  MARINETTE WI USA
  INITIAL COST:                 -
  DUE DATE:                     '00
  KEEL DATE:                    12 SEP 63
  LAUNCH DATE:                  01 AUG 64
  DELIVERY DATE:                17 SEP 65
  COMMISSION DATE:              '65
  CONVERSION DATE:              '00
  LAST OVERHAUL:                01 DEC 83
  MAINTENANCE CYCLE:            2.0 YEARS
  END OF LIFE:                  1995
  UPDATE OF INFORMATION:        07 JAN 87

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        SHIP DIMENSIONS

  LENGTH:          209.0 FEET
  MAX BEAM:        39.5 FEET
  HEIGHT:           78.0 FEET
  GROSS TONNAGE:    1151
  DISPLACEMENT:     1362 TONS
  DRAUGHT:         15.7 FEET
  CRUISE SPEED:    10.0 KNOTS
  RANGE:            8200 NAUTICAL MILES
  MAX SPEED:       11.5 KNOTS
  MIN SPEED:        0.0 KNOTS
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ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                     DIESEL ELECTRIC
AUXILIARY PROPULSION:                DIESEL
NUMBER OF SHAFTS:                    1
BOW THRUSTER:                        RETRACTABLE
ACTIVE RUDDER:                       N
DYNAMIC POSITIONING:                 N
ANTI-ROLL:                           N
STABILIZER:                          N
DEEP ANCHOR:                         NONE  FEET
BERTHING VAN DIMENSIONS:             NONE
INSTRUMENT VAN DIMENSIONS:           8X8X20
WET-LAB:                             Y
DRY-LAB:                             Y
AMMUNITION STORAGE:                  Y
HELO SUPPORT:                        N
METEOROLOGICAL OBSERVATIONS:         NO
UTILITY BOATS:
    1. 14 FOOT BOSTON WHALER
A, U, OR L FRAMES
  MAX HOIST CAPACITY:                10000 POUNDS
  NUMBER OF FRAMES:                  1
CRANES OR BOOMS
  MAX HOIST CAPACITY:                18000 POUNDS
  NUMBER OF CRANES:                  1
WINCHES:
    01. MAJOR TYPE/USE:              DEEP SEA
        SECONDARY TYPE/USE:          OCEANOGRAPHIC
        SLIP-RINGS:                  1
        WIRE TYPE:                   CONDUCTOR CABLE
        WIRE LENGTH:                 45000 FEET
        WIRE DIAMETER:               0.563 INCHES
        SECONDARY WIRE TYPE:         CONDUCTOR CABLE
        SECONDARY WIRE LEN:          45000 FEET
        SECONDARY WIRE DIAM:         0.680 INCHES
    02. MAJOR TYPE/USE:              HYDROGRAPHIC
        SECONDARY TYPE/USE:          STD
        SLIP-RINGS:                  1
        WIRE TYPE:                   WIRE ROPE
        WIRE LENGTH:                 25000 FEET
        WIRE DIAMETER:               0.250 INCHES
        SECONDARY WIRE TYPE:         CONDUCTOR CABLE
        SECONDARY WIRE LEN:          25000 FEET
        SECONDARY WIRE DIAM:         0.255 INCHES
    03. MAJOR TYPE/USE:              STD
        SECONDARY TYPE/USE:          HYDROGRAPHIC
        SLIP-RINGS:                  1
        WIRE TYPE:                   WIRE ROPE
        WIRE LENGTH:                 30000 FEET
        WIRE DIAMETER:               0.322 INCHES
        SECONDARY WIRE TYPE:         CONDUCTOR CABLE
        SECONDARY WIRE LEN:          25000 FEET
        SECONDARY WIRE DIAM:         0.250 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                            VAX 730 (2)
FACSIMILE:                            Y
ELECTROMAGNETIC LOG:                  Y
INERTIAL NAVIGATION:                  N
RADAR (SURFACE SCAN):                 Y
LORAN A:                              N
LORAN C:                              Y
OMEGA:                                N
SATELLITE NAVIGATION:                 Y
RADIO TELETYPE COMMUNICATION:         Y
SINGLE SIDE BAND:                     Y
VHF COMMUNICATIONS:                   Y
STABLE TABLE:                         Y
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NARROW BEAM:                      Y
SEISMIC PROFILING:                Y
SIDE SCAN:                        N
SOUNDING SYSTEM (SHALLOW):        FURUNO
SOUNDING SYSTEM (DEEP):           SEABEAM,EDO

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     FUEL DETAILS

FUEL CAPACITY:                     59000 GALLONS
FUEL TYPE:                               DIESEL #2
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:       1800 GAL/24-HRS
    DURING AVERAGE OPERATIONS:      1700 GAL/24-HRS
    DURING INPORT OPERATIONS:        300 GAL/24-HRS

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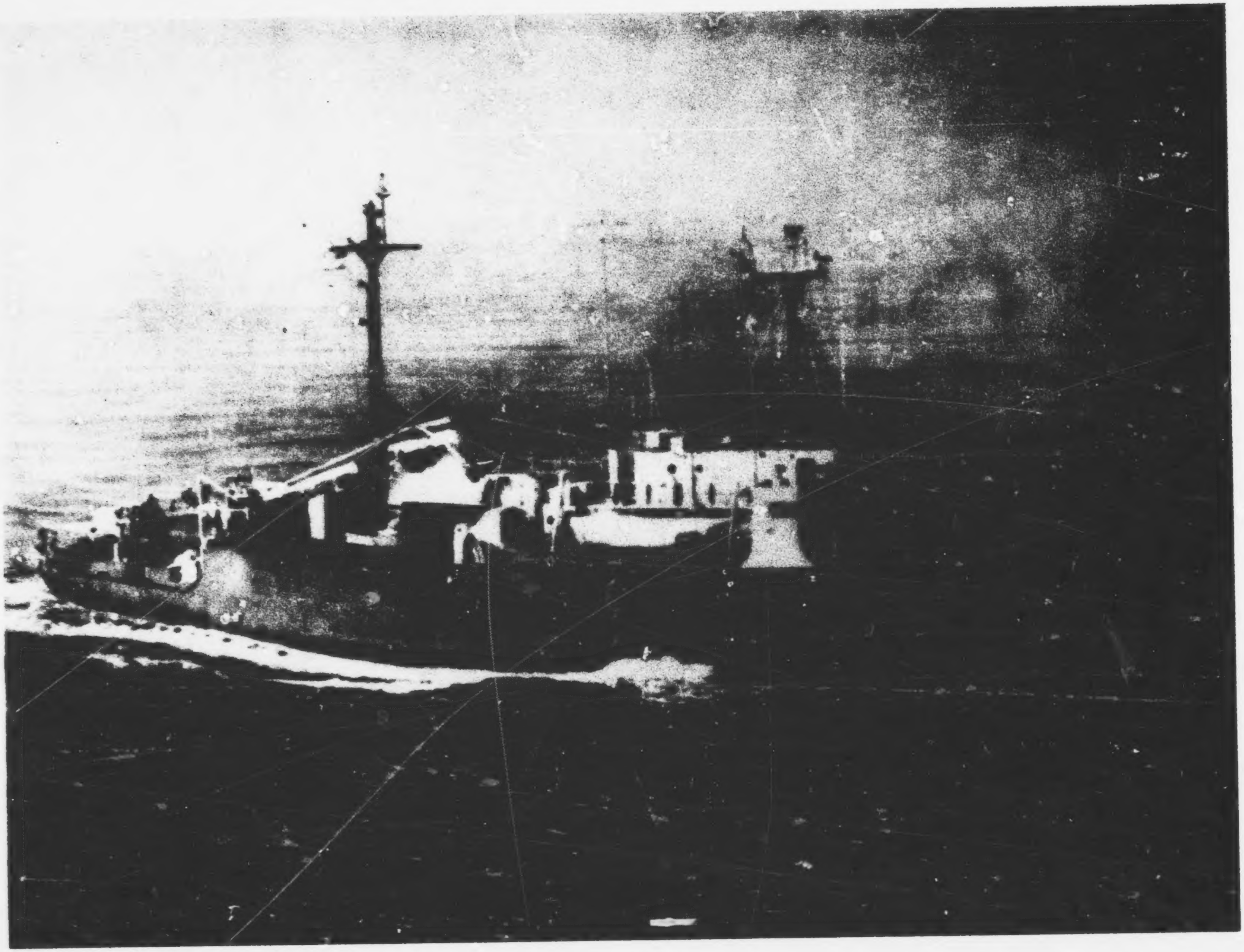

R/V THOMAS WASHINGTON

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             THOMAS WASHINGTON       LAST CHANGED 21 JAN 87

            OPS SCHEDULE FOR PERIOD
            01 JAN 87 THRU 31 DEC 87

     ..........................................
OPEN

DEP: 07 JAN 87 SAN DIEGO
ARR: 23 JAN 87 SAN DIEGO     OPEN                        17 DAY(S)
AREA INDEX: OPEN
     ..........................................
OCEANOGRAPHIC RESEARCH     WINTERER         UC

DEP: 23 JAN 87 SAN DIEGO     ENGINE & EQUIPMENT TESTS     (F)
ARR: 24 JAN 87 SAN DIEGO                                 2 DAY(S)
AREA INDEX: NP9
     ..........................................
OCEANOGRAPHIC RESEARCH     WINTERER         ONR/UC

DEP: 14 FEB 87 SAN DIEGO     SEABEAM-GRAVITY               (F)
ARR: 22 MAR 87 PAPEETE       EQUATOR - LINE ISLANDS  34/5    37 DAY(S)
AREA INDEX: NP9   SP2   NP12
     ..........................................
OCEANOGRAPHIC RESEARCH     KEELING/MCNUTT   NSF

DEP: 27 MAR 87 PAPEETE       SEABEAM-GRAVITY               (F)
ARR: 22 APR 87 PAPEETE       MARQUESAS FAN                 27 DAY(S)
AREA INDEX: SP2
     ..........................................
OCEANOGRAPHIC RESEARCH     CRONAN/SCHETLEMA NSF

DEP: 26 APR 87 PAPEETE       SEABEAM-DREDGING (UK/WHOI)    (F)
ARR: 01 JUN 87 HONOLULU      LINE ISLANDS                  37 DAY(S)
AREA INDEX: SP2   NP12
     ..........................................
OCEANOGRAPHIC RESEARCH     HAMMOND (USC)    NSF

DEP: 06 JUN 87 HONOLULU      MANOP LANDER;BOX CORES        (S)
ARR: 16 JUL 87 HONOLULU      151 -140 W - 1-15N            41 DAY(S)
AREA INDEX: NP12
     ..........................................
OCEANOGRAPHIC RESEARCH     LONSDALE/DEMOUSTIER   NSF/UC

DEP: 19 JUL 87 HONOLULU      TRANSIT + SEABEAM AND
ARR: 28 JUL 87 SAN DIEGO     ACOUSTIC TESTS  10/3          10 DAY(S)
AREA INDEX: NP12  NP9
     ..........................................
OCEANOGRAPHIC RESEARCH     ORCUTT/HEY (UH)  NSF

DEP: 16 OCT 87 SAN DIEGO     OBS
ARR: 14 NOV 87 TALARA        ALT ARR., PUNTARENAS          30 DAY(S)
AREA INDEX: NP9   SP3A  NP13

DEP: 18 NOV 87 TALARA        OBS. ALT DEP., PUNTARENAS
ARR: 17 DEC 87 SAN DIEGO                                   30 DAY(S)
AREA INDEX: SP3A  NP9   NP13
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            FLIP
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                      CAPT CHARLES BISHOP
  POC OFFICE:               ASSISTANT DIRECTOR
  POC ORGANIZATION:         MARINE PHYSICAL LABORATORY
  POC ADDRESS:              SCRIPPS INST. OF OCEANOGRAPHY
  POC CITY/STATE:           LA JOLLA CA  92093
  FTS PREFIX:               619
  COMMERCIAL AREA CODE:     619
  PHONE:                    534-1795

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         ADMINISTRATIVE DETAILS

  DESIGNATOR:                    RP
  CLASS:                         RESEARCH PLATFORM
  CALL SIGN (INTERNATIONAL):      WI7115
  FLEET:                         UNOLS
  SHIP TYPE:                     FLOATING INSTRUMENT PLATFORM
  SHIP OWNER:                    USN
  CERTIFICATION AUTHORITY:       USN
  FLAG REGISTRY:                 USA
  HOME PORT:                     SAN DIEGO CA
  TECHNICAL SPONSOR:             UNIV. OF CALIFORNIA SAN DIEGO
  OPERATIONS CONTROL:            SCRIPPS MARINE PHYSICAL LAB.
  CONTRACTUAL INFORMATION:       ONR CODE 611 LEASE CON# N00014-79-E-0612
  OPERATING COST/DAY:            1.4/84                         THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:          11
  NUMBER OFFICERS:                1
  NUMBER IN CREW:                   4
  MAX SEA STATE:                 -  BEAUFORT SCALE
  ENDURANCE:                      30 DAY(S)
  LIMITING FACTOR:               FOOD
  BUILDER:                       GUNDERSON BROTHERS SHIPYARD
  WHERE BUILT:                   PORTLAND OR USA
  INITIAL COST:                  .850/62  MILLION $'S IN YEAR
  DUE DATE:                      '00
  KEEL DATE:                     '00
  LAUNCH DATE:                   22 JUN 62
  DELIVERY DATE:                 06 AUG 62
  COMMISSION DATE:               '00
  CONVERSION DATE:               '00
  LAST OVERHAUL:                 00 JUN 86
  MAINTENANCE CYCLE:             2.5 YEARS
  END OF LIFE:                   2002
  UPDATE OF INFORMATION:         07 JAN 87

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       SHIP DIMENSIONS

  LENGTH:            360.0 FEET
  MAX BEAM:          28.0 FEET
  HEIGHT:             37.0 FEET
  GROSS TONNAGE:     -
  DISPLACEMENT:        700 TONS
  DRAUGHT:           12.5 FEET
  CRUISE SPEED:      -    KNOTS
  RANGE:             -     NAUTICAL MILES
  MAX SPEED:         -    KNOTS
  MIN SPEED:         -    KNOTS

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       ENGINEERING/DECK EQUIPMENT

  MAIN PROPULSION:                 TOWED, 7-10 KTS
  AUXILIARY PROPULSION:            NONE
  NUMBER OF SHAFTS:                0
  BOW THRUSTER:                    HYD. 60HP
  ACTIVE RUDDER:                   -
  DYNAMIC POSITIONING:             -
  ANTI-ROLL:                       -
  STABILIZER:                      -
  DEEP ANCHOR:                     -     FEET
  BERTHING VAN DIMENSIONS:         -
  INSTRUMENT VAN DIMENSIONS:       -
  WET-LAB:                         N
  DRY-LAB:                         Y
  AMMUNITION STORAGE:              -
  HELO SUPPORT:                    -
  METEOROLOGICAL OBSERVATIONS:     -
  UTILITY BOATS:
      1. 13 FOOT BOSTON WHALER
  A, U, OR L FRAMES
    MAX HOIST CAPACITY:            -     POUNDS
    NUMBER OF FRAMES:              -
  CRANES OR BOOMS
    MAX HOIST CAPACITY:            -     POUNDS
    NUMBER OF CRANES:              5
  WINCHES:
      01. MAJOR TYPE/USE:          DEEP SEA
          SECONDARY TYPE/USE:
          SLIP-RINGS:
          WIRE TYPE:               CONDUCTOR CABLE
          WIRE LENGTH:             20000 FEET
          WIRE DIAMETER:           0.348 INCHES

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       ELECTRONIC EQUIPMENT

  COMPUTERS:                        -
  FACSIMILE:                        -
  ELECTROMAGNETIC LOG:              -
  INERTIAL NAVIGATION:              -
  RADAR (SURFACE SCAN):             Y
  LORAN A:                          -
  LORAN C:                          Y
  OMEGA:                            Y
  SATELLITE NAVIGATION:             Y
  RADIO TELETYPE COMMUNICATION:     -
  SINGLE SIDE BAND:                 Y
  VHF COMMUNICATIONS:               Y
  STABLE TABLE:                     -
  NARROW BEAM:                      -
  SEISMIC PROFILING:                -
  SIDE SCAN:                        -
  SOUNDING SYSTEM (SHALLOW):        -
  SOUNDING SYSTEM (DEEP):           UQN-1D

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       FUEL DETAILS

  FUEL CAPACITY:                      3500 GALLONS
  FUEL TYPE:                               DIESEL #1
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:            GAL/24-HRS
      DURING AVERAGE OPERATIONS:        60 GAL/24-HRS
      DURING INPORT OPERATIONS:          0 GAL/24-HRS

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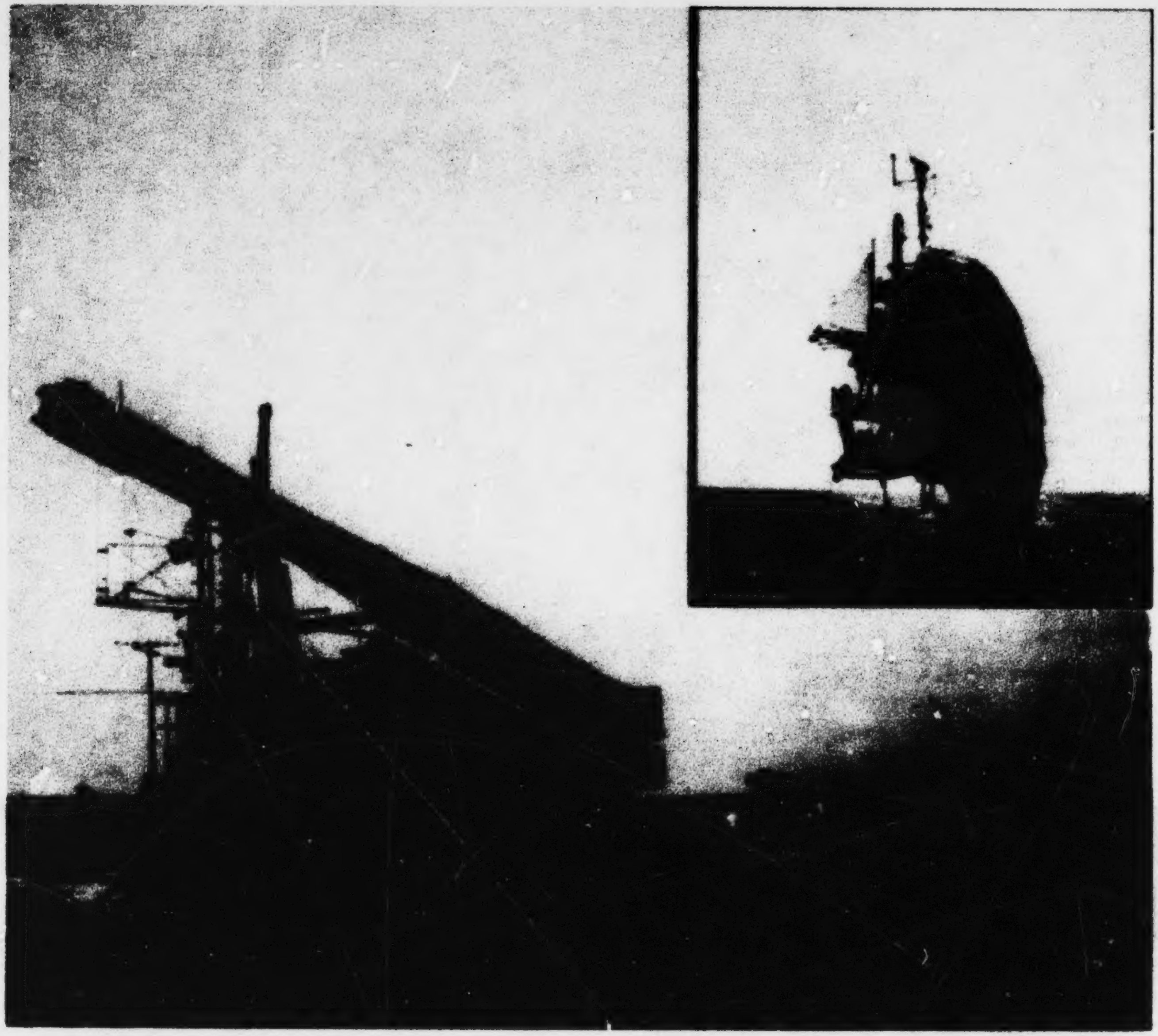

R/V FLIP

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            FLIP                         LAST CHANGED 08 JAN 87

           OPS SCHEDULE FOR PERIOD
           01 JAN 87 THRU 31 DEC 87

      ..........................................
OCEANOGRAPHIC RESEARCH           FISHER               SIO

DEP: 27 JAN 87 SAN DIEGO CA       VERTICAL ACOUSTIC ARRAY
ARR: 28 JAN 87 SAN DIEGO CA       DRIFT LOCAL AREA                 2 DAY(S)
AREA INDEX: NP9

DEP: 13 MAR 87 SAN DIEGO CA       VERTICAL ACOUSTIC ARRAY
ARR: 03 APR 87 SAN DIEGO CA       MOOR-DEEP SOCAL                 22 DAY(S)
AREA INDEX: NP9
      ..........................................
OUT OF SERVICE                                        SIO

DEP: 01 MAY 87 SAN DIEGO CA       OVERHAUL
ARR: 15 MAY 87 SAN DIEGO CA                                       15 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           FISHER/HILDEBRAND    SIO

DEP: 01 JUN 87 SAN DIEGO CA       MULTIDIMENSIONAL ARRAY  - MOOR
ARR: 10 JUN 87 SAN DIEGO CA       INCLUSIVE DATES TBD             10 DAY(S)
AREA INDEX: NP9

DEP: 01 SEP 87 SAN DIEGO CA       HORIZONTAL DIGITAL ACOUSTIC ARRAY
ARR: 10 SEP 87 SAN DIEGO CA       INCLUSIVE DATES TBD  - MOOR     10 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           PINKEL               SIO

DEP: 01 OCT 87 SAN DIEGO CA       CODED TRANSMISSION SONAR  - DRIFT
ARR: 10 OCT 87 SAN DIEGO CA       INCLUSIVE DATES TBD             10 DAY(S)
AREA INDEX: NP9
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            ORB
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     POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                        CAPT CHARLES BISHOP
  POC OFFICE:                 ASSISTANT DIRECTOR
  POC ORGANIZATION:           MARINE PHYSICAL LABORATORY
  POC ADDRESS:                SCRIPPS INST. OF OCEANOGRAPHY
  POC CITY/STATE:             LA JOLLA CA      92093
  FTS PREFIX:                 619
  COMMERCIAL AREA CODE:       619
  PHONE:                      534-1795

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              ADMINISTRATIVE DETAILS

  DESIGNATOR:                      RP
  CLASS:                           RESEARCH PLATFORM
  CALL SIGN (INTERNATIONAL):        WS6315
  FLEET:                           UNOLS
  SHIP TYPE:                       OCEAN RESEARCH BUOY
  SHIP OWNER:                      USN
  CERTIFICATION AUTHORITY:         USN
  FLAG REGISTRY:                   USA
  HOME PORT:                       SAN DIEGO CA
  TECHNICAL SPONSOR:               UNIV. OF CALIFORNIA SAN DIEGO
  OPERATIONS CONTROL:              SCRIPPS MARINE PHYSICAL LAB.
  CONTRACTUAL INFORMATION:         ONR CODE 611 LEASE CON# N00014-79-E-0612
  OPERATING COST/DAY:              1.4/84                         THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:            15
  NUMBER OFFICERS:                  1
  NUMBER IN CREW:                     4
  MAX SEA STATE:                   5  BEAUFORT SCALE
  ENDURANCE:                        30 DAY(S)
  LIMITING FACTOR:                 FOOD
  BUILDER:                         CALIFORNIA STEEL FABRICATORS
  WHERE BUILT:                     SAN DIEGO CA USA
  INITIAL COST:                    .250/67  MILLION $'S IN YEAR
  DUE DATE:                        '00
  KEEL DATE:                       '00
  LAUNCH DATE:                     '00
  DELIVERY DATE:                   00 DEC 67
  COMMISSION DATE:                 '00
  CONVERSION DATE:                 '00
  LAST OVERHAUL:                   '86
  MAINTENANCE CYCLE:               3.0 YEARS
  END OF LIFE:                     2018
  UPDATE OF INFORMATION:           07 JAN 87

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           SHIP DIMENSIONS

  LENGTH:                69.0 FEET
  MAX BEAM:             45.0 FEET
  HEIGHT:                28.0 FEET
  GROSS TONNAGE:        -
  DISPLACEMENT:           330 TONS
  DRAUGHT:               6.0 FEET
  CRUISE SPEED:         -    KNOTS
  RANGE:                -     NAUTICAL MILES
  MAX SPEED:            -    KNOTS
  MIN SPEED:            -    KNOTS

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        ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:                       TOWED, 6 KT MAX
AUXILIARY PROPULSION:                  NONE
NUMBER OF SHAFTS:                      0
BOW THRUSTER:                          NONE
ACTIVE RUDDER:                         -
DYNAMIC POSITIONING:                   -
ANTI-ROLL:                             -
STABILIZER:                            -
DEEP ANCHOR:                           NONE  FEET
BERTHING VAN DIMENSIONS:               -
INSTRUMENT VAN DIMENSIONS:             -
WET-LAB:                               -
DRY-LAB:                               -
AMMUNITION STORAGE:                    -
HELO SUPPORT:                          -
METEOROLOGICAL OBSERVATIONS:           -
UTILITY BOATS:
    1. 12 FOOT RUBBER INFLATABLE
    2. 17 FOOT BOSTON WHALER
A, U, OR L FRAMES
  MAX HOIST CAPACITY:                  -     POUNDS
  NUMBER OF FRAMES:                    -
CRANES OR BOOMS
  MAX HOIST CAPACITY:                  -     POUNDS
  NUMBER OF CRANES:                    -
WINCHES:                               -

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        ELECTRONIC EQUIPMENT

COMPUTERS:                              -
FACSIMILE:                              -
ELECTROMAGNETIC LOG:                    -
INERTIAL NAVIGATION:                    -
RADAR (SURFACE SCAN):                   Y
LORAN A:                                -
LORAN C:                                Y
OMEGA:                                  Y
SATELLITE NAVIGATION:                   Y
RADIO TELETYPE COMMUNICATION:           -
SINGLE SIDE BAND:                       Y
VHF COMMUNICATIONS:                     Y
STABLE TABLE:                           -
NARROW BEAM:                            -
SEISMIC PROFILING:                      -
SIDE SCAN:                              -
SOUNDING SYSTEM (SHALLOW):             UQN-1D
SOUNDING SYSTEM (DEEP):                 -

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        FUEL DETAILS

FUEL CAPACITY:                          5500 GALLONS
FUEL TYPE:                                   DIESEL #1
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:                GAL/24-HRS
    DURING AVERAGE OPERATIONS:          100 GAL/24-HRS
    DURING INPORT OPERATIONS:             0 GAL/24-HRS

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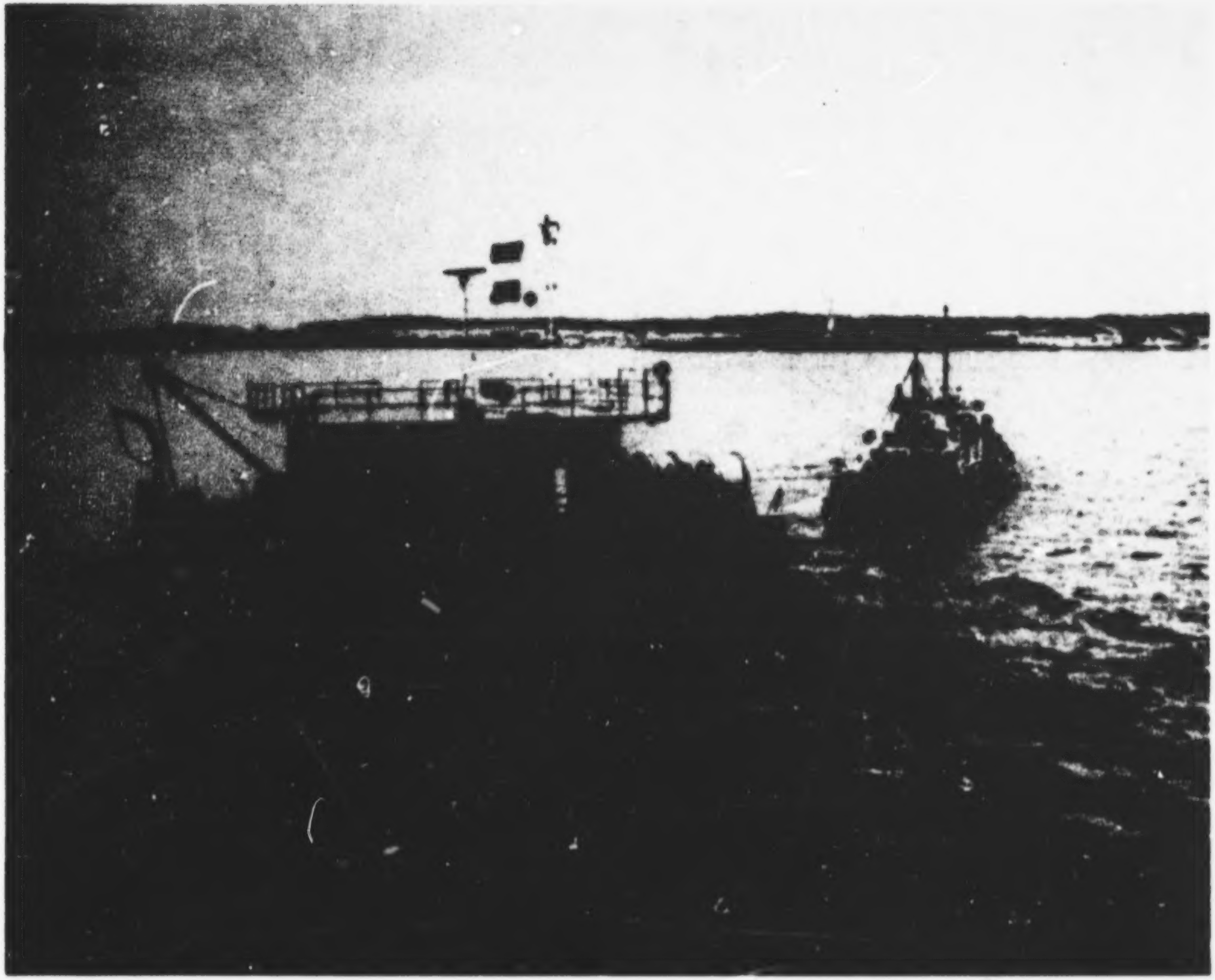

R/P ORB

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                 ORB                       LAST CHANGED 08 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ..........................................
OCEANOGRAPHIC RESEARCH           ANDERSON                SIO

DEP: 26 JAN 87 SAN DIEGO CA        SYNOPTIC SURFACE NOISE INSTRUMENT
ARR: 30 JAN 87 SAN DIEGO CA        MOOR - LOCAL                         5 DAY(S)
AREA INDEX: NP9

DEP: 23 MAR 87 SAN DIEGO CA        SYNOPTIC SURFACE NOISE INSTRUMENT
ARR: 27 MAR 87 SAN DIEGO CA        MOOR - LOCAL                         5 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           SPIESS                  SIO

DEP: 01 JUL 87 SAN DIEGO CA        PRECISION TRANSPONDER - MOOR
ARR: 05 JUL 87 SAN DIEGO CA        INCLUSIVE DATES TBD                  5 DAY(S)
AREA INDEX: NP9
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                ROBERT GORDON SPROUL
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

    POC:                      DR. GEORGE SHOR JR
    POC OFFICE:               ASSOCIATE DIRECTOR
    POC ORGANIZATION:         SCRIPPS INSTITUTION OF OCEANOGRAPHY
    POC ADDRESS:              UCSD - A-010
    POC CITY/STATE:           LA JOLLA CA  92093
    FTS PREFIX:               619
    COMMERCIAL AREA CODE:     619
    PHONE:                    534 2853

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             ADMINISTRATIVE DETAILS

    COMMON SHIP NAME:              SPROUL
    DESIGNATOR:                    RV
    CLASS:                         GULF COAST WORK BOAT
    CALL SIGN (INTERNATIONAL):     WSQ2674
    FLEET:                         UNOLS
    SHIP TYPE:                     OCEAN RESEARCH - GENERAL
    SHIP OWNER:                    UNIV. OF CALIFORNIA
    CERTIFICATION AUTHORITY:       ABS
    FLAG REGISTRY:                 USA
    HOME PORT:                     SAN DIEGO CA
    TECHNICAL SPONSOR:             UNIV OF CALIFORNIA SAN DIEGO
    OPERATIONS CONTROL:            UNIV OF CALIFORNIA SAN DIEGO
    CONTRACTUAL INFORMATION:       NONE
    OPERATING COST/DAY:            4.0/87                    THOUSAND $'S IN YR
    SCIENTIFIC COMPLEMENT:          12
    NUMBER OFFICERS:               0
    NUMBER IN CREW:                   5
    MAX SEA STATE:                 -  BEAUFORT SCALE
    ENDURANCE:                      14 DAY(S)
    LIMITING FACTOR:               FRESH WATER
    BUILDER:                       STEINER FABRICATORS INC.
    WHERE BUILT:                   BAYOU LA BATRE AL
    INITIAL COST:                  1.3/81   MILLION $'S IN YEAR
    DUE DATE:                      '00
    KEEL DATE:                     '00
    LAUNCH DATE:                   '00
    DELIVERY DATE:                 '81
    COMMISSION DATE:               '00
    CONVERSION DATE:               00 AUG 84
    LAST OVERHAUL:                 00 DEC 85
    MAINTENANCE CYCLE:             3.0 YEARS
    END OF LIFE:                   2001
    UPDATE OF INFORMATION:         07 JAN 87

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           SHIP DIMENSIONS

    LENGTH:             125.0 FEET
    MAX BEAM:           32.0 FEET
    HEIGHT:             -     FEET
    GROSS TONNAGE:        150
    DISPLACEMENT:         524 TONS
    DRAUGHT:             8.6 FEET
    CRUISE SPEED:        9.5 KNOTS
    RANGE:               3800 NAUTICAL MILES
    MAX SPEED:          10.0 KNOTS
    MIN SPEED:           2.0 KNOTS
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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL GEARED
AUXILIARY PROPULSION: NONE
NUMBER OF SHAFTS: 2
BOW THRUSTER: WHITEGILL
ACTIVE RUDDER: N
DYNAMIC POSITIONING: N
ANTI-ROLL: N
STABILIZER: N
DEEP ANCHOR: NONE FEET
BERTHING VAN DIMENSIONS: 8X8X14
INSTRUMENT VAN DIMENSIONS: 10X8X30
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: N
UTILITY BOATS:
  1. 14 FOOT BOSTON WHALER
  2. 12 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY: 6500 POUNDS
  NUMBER OF FRAMES: 1
CRANES OR BOOMS
  MAX HOIST CAPACITY: 1500 POUNDS
  NUMBER OF CRANES: 1
WINCHES:
  01. MAJOR TYPE/USE: TRAWL
    SECONDARY TYPE/USE: UNKNOWN
    SLIP-RINGS: N
    WIRE TYPE: WIRE ROPE
    WIRE LENGTH: 14000 FEET
    WIRE DIAMETER: 0.375 INCHES
  02. MAJOR TYPE/USE: HYDROGRAPHIC
    SECONDARY TYPE/USE: UNKNOWN
    SLIP-RINGS: N
    WIRE TYPE: WIRE ROPE
    WIRE LENGTH: 16000 FEET
    WIRE DIAMETER: 0.250 INCHES
  03. MAJOR TYPE/USE: CTD
    SECONDARY TYPE/USE: UNKNOWN
    SLIP-RINGS: 1
    WIRE TYPE: CONDUCTOR CABLE
    WIRE LENGTH: 10000 FEET
    WIRE DIAMETER: 0.322 INCHES
  04. MAJOR TYPE/USE: CTD
    SECONDARY TYPE/USE: CTD
    SLIP-RINGS: 1
    WIRE TYPE: CONDUCTOR CABLE
    WIRE LENGTH: 07500 FEET
    WIRE DIAMETER: 0.264 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: KAYPRO
FACSIMILE: N
ELECTROMAGNETIC LOG: N
INERTIAL NAVIGATION: N
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: Y
SATELLITE NAVIGATION: Y
RADIO TELETYPE COMMUNICATION: N
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y
STABLE TABLE: N
NARROW BEAM: N
SEISMIC PROFILING: N

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  SIDE SCAN:                     N
  SOUNDING SYSTEM (SHALLOW):     FURUNO
  SOUNDING SYSTEM (DEEP):        GDR - 12KHZ

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       FUEL DETAILS

  FUEL CAPACITY:                  21000 GALLONS
  FUEL TYPE:                            DIESEL #2
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:    1200 GAL/24-HRS
      DURING AVERAGE OPERATIONS:    740 GAL/24-HRS
      DURING INPORT OPERATIONS:         GAL/24-HRS

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R/V ROBERT GORDON SPROUL

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                 ROBERT GORDON SPROUL      LAST CHANGED 16 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ..........................................
OCEANOGRAPHIC RESEARCH           EPPLEY                 NSF

DEP: 01 JAN 87 SAN DIEGO           BIOLOGY                          (F)
ARR: 13 JAN 87 SAN DIEGO           SO. CALIFORNIA                 13 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           DAVIS                  NAVY

DEP: 20 JAN 87 SAN DIEGO                                            (F)
ARR: 23 JAN 87 SAN DIEGO           EQUIPMENT TESTING                4 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           BERGER/GOLDBERG        NSF/UC

DEP: 03 FEB 87 SAN DIEGO           BOX CORING, CHEM. STUDIES,       (F)
ARR: 09 FEB 87 SAN DIEGO           MOORING DEPLOYMENT.  4/3         7 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           NIILER                 NAVY

DEP: 21 FEB 87 SAN DIEGO                                            (F)
ARR: 24 FEB 87 SAN DIEGO           INSTRUMENT TESTS                 4 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           ROSENBLATT             UC

DEP: 28 FEB 87 SAN DIEGO                                            (F)
ARR: 28 FEB 87 SAN DIEGO            STUDENT CRUISE                  1 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           NIILER                 NAVY

DEP: 03 MAR 87 SAN DIEGO                                            (F)
ARR: 06 MAR 87 SAN DIEGO            INSTRUMENT TESTS                4 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           YAYANOS                NSF

DEP: 10 MAR 87 SAN DIEGO                                            (F)
ARR: 13 MAR 87 SAN DIEGO            BENTHIC BIOLOGY                 4 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           FELBECK                NSF

DEP: 24 MAR 87 SAN DIEGO
ARR: 30 MAR 87 SAN DIEGO            BENTHIC BIOLOGY                 7 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           KLINGER/SMITH/WEBB     UC

DEP: 02 APR 87 SAN DIEGO           BIOLOGY/STUDENT CRUISE/EQUIPMENT TESTS
ARR: 11 APR 87 SAN DIEGO            SAN CLEMENTE BASIN            10 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           JAHNKE                 NSF

DEP: 17 APR 87 SAN DIEGO           BOX CORES                        (F)
ARR: 01 MAY 87 SAN DIEGO            OFF BAJA CALIF.               15 DAY(S)
AREA INDEX: NP9
      ..........................................
OCEANOGRAPHIC RESEARCH           DORMAN                 NSF
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DEP: 06 MAY 87 SAN DIEGO
ARR: 08 MAY 87 SAN DIEGO          OBS                                3 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          MULLIN                 UC

DEP: 09 MAY 87 SAN DIEGO
ARR: 09 MAY 87 SAN DIEGO           STUDENT CRUISE                    1 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          KOOYMAN                UC

DEP: 16 MAY 87 SAN DIEGO                                              (F)
ARR: 16 MAY 87 SAN DIEGO           BIOLOGY CLASS TRIP                1 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          YAYANOS                NSF

DEP: 19 MAY 87 SAN DIEGO                                             (F)
ARR: 21 MAY 87 SAN DIEGO          BENTHIC BIOLOGY                    3 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          FELBECK                NSF

DEP: 26 MAY 87 SAN DIEGO
ARR: 01 JUN 87 SAN DIEGO          BENTHIC BIOLOGY                    7 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          VOSS                   NAVY

DEP: 02 JUN 87 SAN DIEGO                                             (F)
ARR: 03 JUN 87 SAN DIEGO          OPTICS                             2 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          LAI                    UC

DEP: 05 JUN 87 SAN DIEGO          BIOLOGY/SHARK STUDIES/
ARR: 15 JUN 87 SAN DIEGO                                            11 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          REIMERS                NSF

DEP: 16 JUN 87 SAN DIEGO
ARR: 19 JUN 87 SAN DIEGO          EQUIPMENT TESTING                  4 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          JACKSON/LEDWELL        DOE/NSF

DEP: 20 JUN 87 SAN DIEGO                                             (F)
ARR: 29 JUN 87 SAN DIEGO          CALIFORNIA BASIN PROJECT 8/2      10 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          OHMAN                  UC

DEP: 01 JUL 87 SAN DIEGO
ARR: 03 JUL 87 SAN DIEGO          EQUIPMENT TESTING                  3 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          EPPLEY                 NSF

DEP: 06 JUL 87 SAN DIEGO                                             (F)
ARR: 12 JUL 87 SAN DIEGO          FOOD CHAIN BIOLOGY                 7 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          LAI                    UC

DEP: 13 JUL 87 SAN DIEGO
ARR: 13 JUL 87 SAN DIEGO          GEOCHEMISTRY                       1 DAY(S)
AREA INDEX: NP9
            ........................................
OCEANOGRAPHIC RESEARCH          KLIMLEY                NSF
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DEP: 18 JUL 87 SAN DIEGO          STOPS IN LA PAZ
ARR: 18 AUG 87 SAN DIEGO           SHARK STUDIES                        32 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          BERGER                  NSF/UC

DEP: 24 AUG 87 SAN DIEGO
ARR: 31 AUG 87 SAN DIEGO          BOX CORES   4/3                        8 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          SIMPSON                 UC

DEP: 04 SEP 87 SAN DIEGO
ARR: 16 SEP 87 SAN DIEGO          PHYSICAL OCEANOGRAPHY                 13 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          COX                     NAVY

DEP: 21 SEP 87 SAN DIEGO
ARR: 26 SEP 87 SAN DIEGO          BIOLOGY                                6 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          SMITH                   UC/UC

DEP: 28 SEP 87 SAN DIEGO
ARR: 08 OCT 87 SAN DIEGO          STUDENT CRUISE  4/6                   11 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          YAYANOS                 NSF

DEP: 11 OCT 87 SAN DIEGO                                                 (F)
ARR: 13 OCT 87 SAN DIEGO          BENTHIC BIOLOGY                        3 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          LUND                    NSF

DEP: 19 OCT 87 SAN DIEGO
ARR: 23 OCT 87 SAN DIEGO          BOX CORES                              5 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          SMITH                   UC

DEP: 16 NOV 87 SAN DIEGO
ARR: 20 NOV 87 SAN DIEGO          STUDENT CRUISE                         5 DAY(S)
AREA INDEX: NP9
       ........................................
OCEANOGRAPHIC RESEARCH          LEDWELL                 NSF

DEP: 29 NOV 87 SAN DIEGO
ARR: 20 DEC 87 SAN DIEGO           TRACERS                              22 DAY(S)
AREA INDEX: NP9
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                        MR LEE H KNIGHT
  POC OFFICE:                 -
  POC ORGANIZATION:           SKIDAWAY INSTITUTE OF OCEANOGRAPHY
  POC ADDRESS:                PO BOX 13687
  POC CITY/STATE:             SAVANNAH GA 31416-0687
  FTS PREFIX:                 912
  COMMERCIAL AREA CODE:       912
  PHONE:                      356-2486

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          ADMINISTRATIVE DETAILS

  SHORT NAME:                     FIN
  DESIGNATOR:                     RV
  CLASS:                          TRAWLER YACHT
  CALL SIGN (INTERNATIONAL):
  FLEET:                          UNOLS
  SHIP TYPE:                      -
  SHIP OWNER:                     UNIVERSITY SYSTEM OF GEORGIA
  CERTIFICATION AUTHORITY:        US COAST GUARD
  FLAG REGISTRY:                  USA
  HOME PORT:                      SAVANNAH GA
  TECHNICAL SPONSOR:              SKIDAWAY INSTITUTE OF OCEANOGRAPHY
  OPERATIONS CONTROL:             SKIDAWAY INST. OF OCEANOGRAPHY
  CONTRACTUAL INFORMATION:        NONE
  OPERATING COST/DAY:             1.1/85                  THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:            8
  NUMBER OFFICERS:                 2
  NUMBER IN CREW:                     3
  MAX SEA STATE:                   4 BEAUFORT SCALE
  ENDURANCE:                        7 DAY(S)
  LIMITING FACTOR:                WATER-ACCOMMODATIONS
  BUILDER:                        XNIDIES
  WHERE BUILT:                    ST.AUGUSTINE FL USA
  INITIAL COST:                   -
  DUE DATE:                       '00
  KEEL DATE:                      '00
  LAUNCH DATE:                    '72
  DELIVERY DATE:                  '72
  COMMISSION DATE:                '00
  CONVERSION DATE:                '75
  LAST OVERHAUL:                  '81
  MAINTENANCE CYCLE:              -    YEARS
  END OF LIFE:                    1991
  UPDATE OF INFORMATION:          07 JAN 87

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        SHIP DIMENSIONS

  LENGTH:             72.0 FEET
  MAX BEAM:          20.0 FEET
  HEIGHT:             60.0 FEET
  GROSS TONNAGE:     -
  DISPLACEMENT:          86 TONS
  DRAUGHT:            8.5 FEET
  CRUISE SPEED:      10.0 KNOTS
  RANGE:              1800 NAUTICAL MILES
  MAX SPEED:         10.0 KNOTS
  MIN SPEED:          0.5 KNOTS
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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL HYDRAUL.
AUXILIARY PROPULSION: -
NUMBER OF SHAFTS: 1
BOW THRUSTER: NO
ACTIVE RUDDER: N
DYNAMIC POSITIONING: N
ANTI-ROLL: N
STABILIZER: Y
DEEP ANCHOR: NONE FEET
BERTHING VAN DIMENSIONS: NO
INSTRUMENT VAN DIMENSIONS: 8X8X10
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: -
UTILITY BOATS: N
A, U, OR L FRAMES
  MAX HOIST CAPACITY: 5000 POUNDS
  NUMBER OF FRAMES: 1
CRANES OR BOOMS
  MAX HOIST CAPACITY: 2500 POUNDS
  NUMBER OF CRANES: 1
WINCHES:
- 01. MAJOR TYPE/USE: HYDROGRAPHIC
  SECONDARY TYPE/USE: HYDROGRAPHIC
  SLIP-RINGS: 4
  WIRE TYPE: WIRE ROPE
  WIRE LENGTH: 2000 FEET
  WIRE DIAMETER: 0.219 INCHES
- 02. MAJOR TYPE/USE: TRAWL
  SECONDARY TYPE/USE: CORING
  SLIP-RINGS: N
  WIRE TYPE: WIRE ROPE
  WIRE LENGTH: 3000 FEET
  WIRE DIAMETER: 0.500 INCHES
- 03. MAJOR TYPE/USE: HYDROGRAPHIC
  SECONDARY TYPE/USE:
  SLIP-RINGS: N
  WIRE TYPE: WIRE ROPE
  WIRE LENGTH: 5000 FEET
  WIRE DIAMETER: 0.250 INCHES
- 04. MAJOR TYPE/USE: ANCHOR
  SECONDARY TYPE/USE:
  SLIP-RINGS: N
  WIRE TYPE: WIRE ROPE
  WIRE LENGTH: 600 FEET
  WIRE DIAMETER: 0.562 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: NONE
FACSIMILE: Y
ELECTROMAGNETIC LOG: N
INERTIAL NAVIGATION: N
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: N
SATELLITE NAVIGATION: N
RADIO TELETYPE COMMUNICATION: N
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y
STABLE TABLE: N
NARROW BEAM: N
SEISMIC PROFILING: N
SIDE SCAN: N
SOUNDING SYSTEM (SHALLOW): RAYTHEON

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  SOUNDING SYSTEM (DEEP):        SIMRAD

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       FUEL DETAILS

  FUEL CAPACITY:                   5500 GALLONS
  FUEL TYPE:                            DIESEL #2
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:     840 GAL/24-HRS
      DURING AVERAGE OPERATIONS:    600 GAL/24-HRS
      DURING INPORT OPERATIONS:       0 GAL/24-HRS

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                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ..........................................
OCEANOGRAPHIC RESEARCH                                  SKIDAWAY INSTITUTE

DEP: 01 JAN 87 SAVANNAH            ALL CRUISES IN COASTAL WATERS OF SE US.
ARR: 31 DEC 87 SAVANNAH            CONTACT POC FOR DETAILS.        365 DAY(S)
AREA INDEX: NA6
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           OSPREY
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     POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC:                        MR DON NEWMAN
POC OFFICE:                 MANAGER MARINE SUPPORT FACILITY
POC ORGANIZATION:           INST. MARINE & COASTAL STUDIES, USC
POC ADDRESS:                820 SOUTH SEASIDE AVENUE
POC CITY/STATE:             TERMINAL ISLAND CA 90731
FTS PREFIX:                 213
COMMERCIAL AREA CODE:       213
PHONE:                      743 6977

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          ADMINISTRATIVE DETAILS

DESIGNATOR:                     RV
CLASS:                          TUNA SEINER
CALL SIGN (INTERNATIONAL):      WP8613
FLEET:                          UNOLS
SHIP TYPE:                      OCEAN RESEARCH-GENERAL
SHIP OWNER:                     UNIV. OF SOUTHERN CALIFORNIA
CERTIFICATION AUTHORITY:        US COAST GUARD/ABS
FLAG REGISTRY:                  USA
HOME PORT:                      LOS ANGELES CA
TECHNICAL SPONSOR:              UNIV. OF SOUTHERN CALIFORNIA
OPERATIONS CONTROL:             UNIV. OF SOUTHERN CALIFORNIA
CONTRACTUAL INFORMATION:        NONE
OPERATING COST/DAY:             8.8/87                   THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT:           16
NUMBER OFFICERS:                 6
NUMBER IN CREW:                    8
MAX SEA STATE:                   6 BEAUFORT SCALE
ENDURANCE:                       75 DAY(S)
LIMITING FACTOR:                STORES
BUILDER:                        CAMPBELL SHIP
WHERE BUILT:                    SAN DIEGO CA USA
INITIAL COST:                   5.5/73   MILLION $'S IN YEAR
DUE DATE:                       '00
KEEL DATE:                      '00
LAUNCH DATE:                    '73
DELIVERY DATE:                  '73
COMMISSION DATE:                '73
CONVERSION DATE:                '85
LAST OVERHAUL:                  00 DEC 84
MAINTENANCE CYCLE:              1.5 YEARS
END OF LIFE:                    2015
UPDATE OF INFORMATION:          07 JAN 87

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        SHIP DIMENSIONS

LENGTH:               220.0 FEET
MAX BEAM:             38.0 FEET
HEIGHT:                70.0 FEET
GROSS TONNAGE:          968
DISPLACEMENT:          1250 TONS
DRAUGHT:              17.5 FEET
CRUISE SPEED:         13.5 KNOTS
RANGE:                18000 NAUTICAL MILES
MAX SPEED:            17.3 KNOTS
MIN SPEED:            00.1 KNOTS

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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL GEARED
AUXILIARY PROPULSION: ELLIOT WHITE
NUMBER OF SHAFTS: 1
BOW THRUSTER: Y
ACTIVE RUDDER: N
DYNAMIC POSITIONING: Y
ANTI-ROLL: Y
STABILIZER: N
DEEP ANCHOR: 1500 FEET
BERTHING VAN DIMENSIONS: 8X8X20
INSTRUMENT VAN DIMENSIONS: 8X8X20
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: SURFACE
UTILITY BOATS:
  1. 18 FOOT SURVEY LAUNCH
  2. 20 FOOT RUBBER INFLATABLE
  3. 34 FOOT SURVEY LAUNCH
A, U, OR L FRAMES
  MAX HOIST CAPACITY: 30000 POUNDS
  NUMBER OF FRAMES: 2
CRANES OR BOOMS
  MAX HOIST CAPACITY: 36000 POUNDS
  NUMBER OF CRANES: 2
WINCHES:
  01. MAJOR TYPE/USE: HYDROGRAPHIC
    SECONDARY TYPE/USE:
    SLIP-RINGS: Y
    WIRE TYPE: WIRE ROPE
    WIRE LENGTH: 18000 FEET
    WIRE DIAMETER: 0.187 INCHES
  02. MAJOR TYPE/USE: CORING
    SECONDARY TYPE/USE: TRAWL
    SLIP-RINGS: N
    WIRE TYPE: WIRE ROPE
    WIRE LENGTH: 20000 FEET
    WIRE DIAMETER: 0.500 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: Y
FACSIMILE: Y
ELECTROMAGNETIC LOG: Y
INERTIAL NAVIGATION: Y
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: Y
SATELLITE NAVIGATION: Y
RADIO TELETYPE COMMUNICATION: Y
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y
STABLE TABLE: N
NARROW BEAM: N
SEISMIC PROFILING: Y
SIDE SCAN: N
SOUNDING SYSTEM (SHALLOW): YES
SOUNDING SYSTEM (DEEP): YES

FUEL DETAILS

FUEL CAPACITY: 156000 GALLONS
FUEL TYPE: DIESEL #2
FUEL CONSUMPTION RATES:

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      AT NORMAL CRUISING SPEED:    2500 GAL/24-HRS
      DURING AVERAGE OPERATIONS:   1500 GAL/24-HRS
      DURING INPORT OPERATIONS:     300 GAL/24-HRS

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R/V OSPREY

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                 OSPREY                      LAST CHANGED 28 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87
       .........................................
OUT OF SERVICE                                            USC

DEP: 01 JAN 87 WILMINGTON CA       SHIP CONVERSION CONTINUES THROUGH 1987
ARR: 31 DEC 87 WILMINGTON CA       CONTACT POC FOR MORE INFO       365 DAY(S)
AREA INDEX: NP9
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                        CAPT T K TREADWELL
  POC OFFICE:                 MARINE OPERATIONS OFFICER
  POC ORGANIZATION:           DEPARTMENT OF OCEANOGRAPHY
  POC ADDRESS:                TEXAS A & M UNIVERSITY
  POC CITY/STATE:             COLLEGE STATION TX  77843
  FTS PREFIX:                 409
  COMMERCIAL AREA CODE:       409
  PHONE:                      845-7212

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          ADMINISTRATIVE DETAILS

  DESIGNATOR:                      AGOR 21
  CLASS:                           AGOR 21 CLASS
  CALL SIGN (INTERNATIONAL):       KJCL
  FLEET:                           UNOLS
  SHIP TYPE:                       OCEAN RESEARCH - GENERAL
  SHIP OWNER:                      USN
  CERTIFICATION AUTHORITY:         AMERICAN BUREAU OF SHIPPING
  FLAG REGISTRY:                   USA
  HOME PORT:                       GALVESTON TX
  TECHNICAL SPONSOR:               TEXAS A & M UNIVERSITY
  OPERATIONS CONTROL:              TEXAS A & M UNIVERSITY
  CONTRACTUAL INFORMATION:         AVAILABLE FOR REIMBURSABLE LEASE. CALL POC
  OPERATING COST/DAY:              7.2/86                       THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:            21
  NUMBER OFFICERS:                  5
  NUMBER IN CREW:                     5
  MAX SEA STATE:                    8 BEAUFORT SCALE
  ENDURANCE:                        60 DAY(S)
  LIMITING FACTOR:                 FOOD
  BUILDER:                         HALTER MARINE SERVICES INC
  WHERE BUILT:                     NEW ORLEANS LA USA
  INITIAL COST:                    3.1/73   MILLION $'S IN YEAR
  DUE DATE:                        '00
  KEEL DATE:                       '73
  LAUNCH DATE:                     25 MAY 73
  DELIVERY DATE:                   14 NOV 73
  COMMISSION DATE:                 '00
  CONVERSION DATE:                 '00
  LAST OVERHAUL:                   15 JAN 84
  MAINTENANCE CYCLE:               2.0 YEARS
  END OF LIFE:                     2003
  UPDATE OF INFORMATION:           08 JAN 87

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        SHIP DIMENSIONS

  LENGTH:               182.0 FEET
  MAX BEAM:             36.0 FEET
  HEIGHT:                42.0 FEET
  GROSS TONNAGE:          298
  DISPLACEMENT:           946 TONS
  DRAUGHT:              12.5 FEET
  CRUISE SPEED:          9.5 KNOTS
  RANGE:                 8000 NAUTICAL MILES
  MAX SPEED:            11.8 KNOTS
  MIN SPEED:             0.0 KNOTS

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     ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:                  DIESEL GEARED
AUXILIARY PROPULSION:             NO
NUMBER OF SHAFTS:                 2
BOW THRUSTER:                     ELECTRIC/HYDRAULIC
ACTIVE RUDDER:                    N
DYNAMIC POSITIONING:              N
ANTI-ROLL:                        N
STABILIZER:                       N
DEEP ANCHOR:                      10000 FEET
BERTHING VAN DIMENSIONS:          NO
INSTRUMENT VAN DIMENSIONS:        8X8X20
WET-LAB:                          Y
DRY-LAB:                          Y
AMMUNITION STORAGE:               Y
HELO SUPPORT:                     N
METEOROLOGICAL OBSERVATIONS:      SURFACE
UTILITY BOATS:
    1. 15 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:             30000 POUNDS
  NUMBER OF FRAMES:               2
CRANES OR BOOMS
  MAX HOIST CAPACITY:              5000 POUNDS
  NUMBER OF CRANES:               2
WINCHES:
    01. MAJOR TYPE/USE:           HYDROGRAPHIC
        SECONDARY TYPE/USE:       CTD
        SLIP-RINGS:               Y
        WIRE TYPE:                CONDUCTOR CABLE
        WIRE LENGTH:              23000 FEET
        WIRE DIAMETER:            0.312 INCHES
    02. MAJOR TYPE/USE:           CTD
        SECONDARY TYPE/USE:       HYDROGRAPHIC
        SLIP-RINGS:               Y
        WIRE TYPE:                CONDUCTOR CABLE
        WIRE LENGTH:              30000 FEET
        WIRE DIAMETER:            0.312 INCHES
    03. MAJOR TYPE/USE:           TRAWL
        SECONDARY TYPE/USE:
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:              30000 FEET
        WIRE DIAMETER:            0.500 INCHES

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     ELECTRONIC EQUIPMENT

COMPUTERS:                         HP 600A SAILLOOP
FACSIMILE:                         Y
ELECTROMAGNETIC LOG:               Y
INERTIAL NAVIGATION:               N
RADAR (SURFACE SCAN):              Y
LORAN A:                           Y
LORAN C:                           Y
OMEGA:                             Y
SATELLITE NAVIGATION:              Y
RADIO TELETYPE COMMUNICATION:      N
SINGLE SIDE BAND:                  Y
VHF COMMUNICATIONS:                Y
STABLE TABLE:                      N
NARROW BEAM:                       N
SEISMIC PROFILING:                 Y
SIDE SCAN:                         N
SOUNDING SYSTEM (SHALLOW):         ROSS
SOUNDING SYSTEM (DEEP):            RAYTHEON

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     FUEL DETAILS
  FUEL CAPACITY:                   89000 GALLONS
  FUEL TYPE:                             DIESEL FUEL MARINE
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:     1600 GAL/24-HRS
      DURING AVERAGE OPERATIONS:    1400 GAL/24-HRS
      DURING INPORT OPERATIONS:      400 GAL/24-HRS

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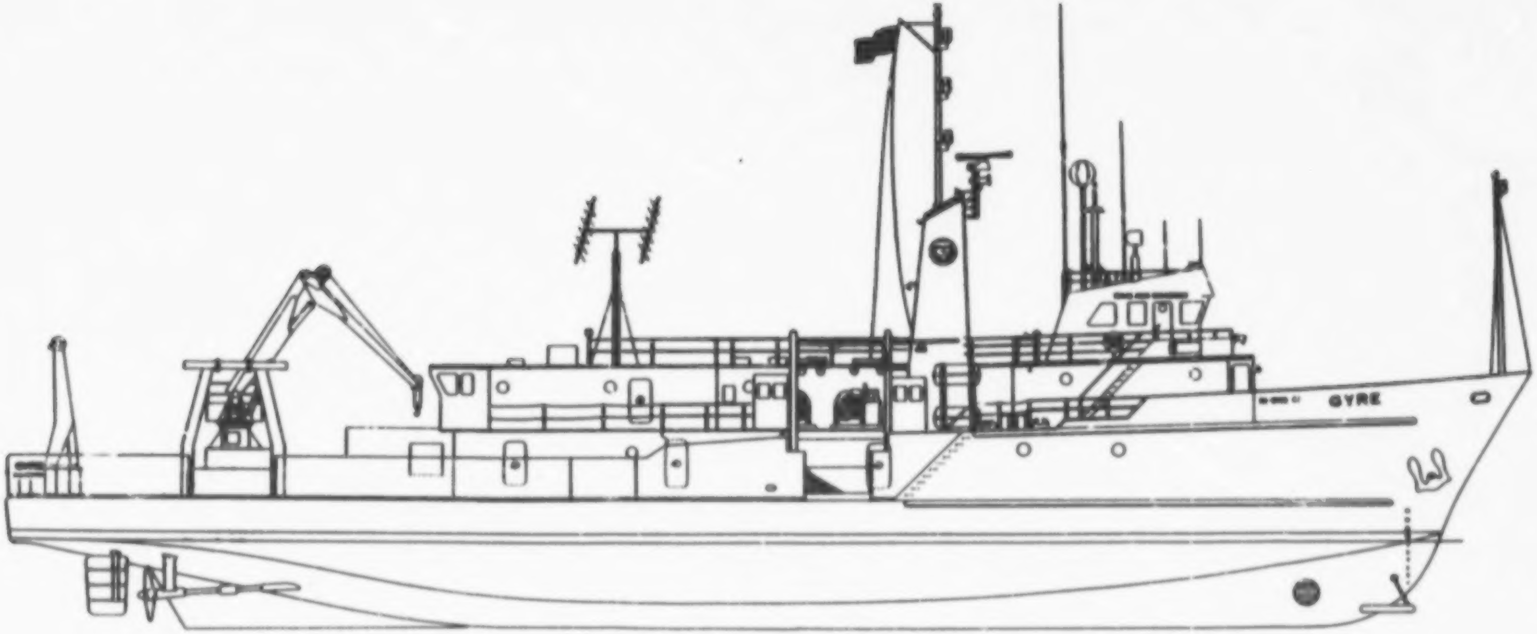
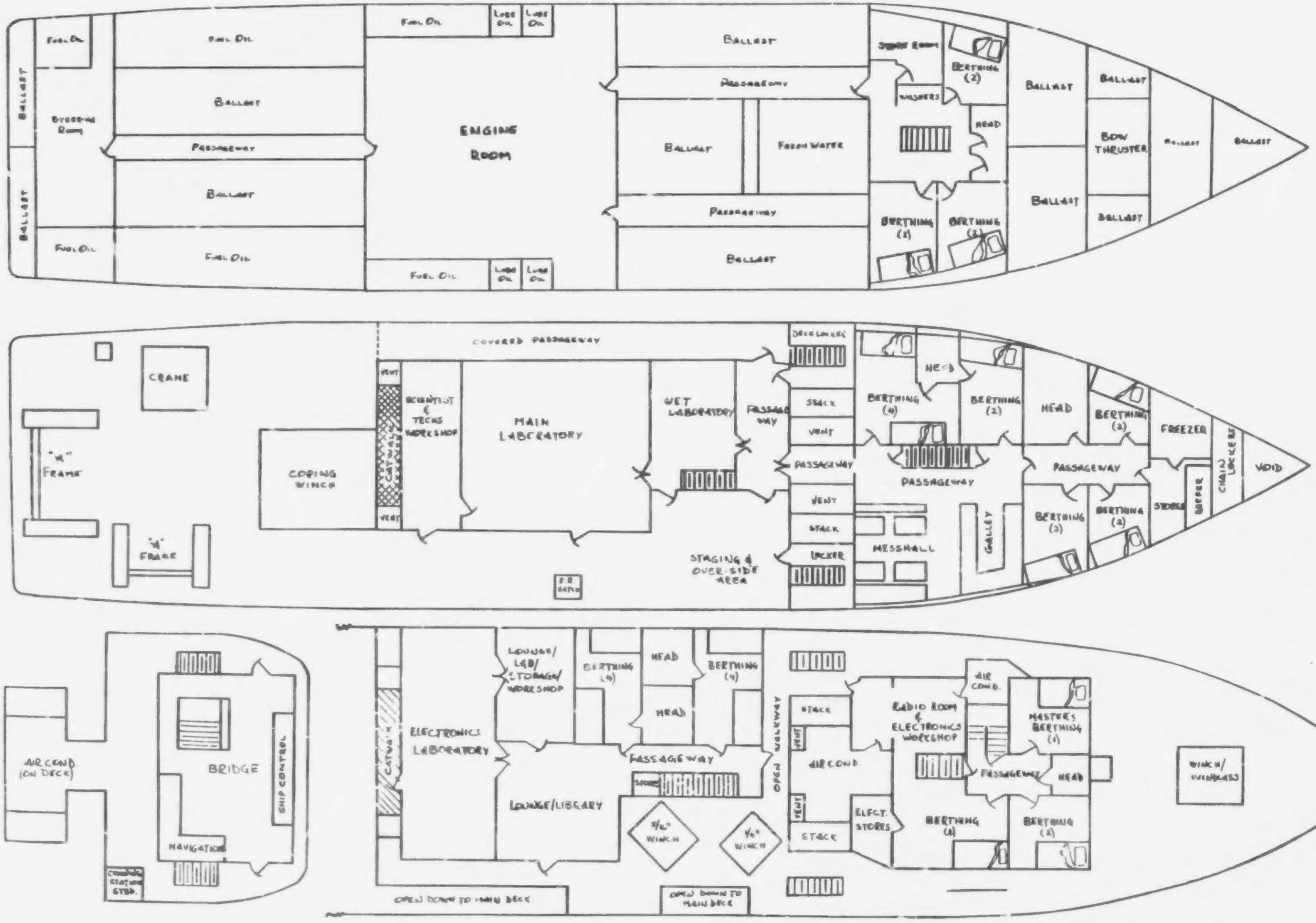


R/V GYRE


Ballast
Ballast
Fuel Oil
Steering Room
Fuel Oil
Fuel Oil
Ballast
Passageway
Ballast
Fuel Oil
Fuel Oil
Lube Oil
Lube Oil
Engine Room
Fuel Oil
Lube Oil
Lube Oil
Ballast
Passageway
Ballast
Fresh Water
Passageway
Ballast
Store Room
Washers
Berthing (2)
Head
Berthing (2)
Berthing (2)
Ballast
Ballast
Ballast
Bow Thruster
Ballast
Ballast
Ballast
Covered Passageway
Crane
"A" Frame
"A" Frame
Coring Winch
Vent
Catwalk
Vent
Scientist & Techs Workshop
Main Laboratory
Wet Laboratory
Passageway
F.R. Hatch
Staging & Over-side Area
Deck Locker
Stack
Vent
Passageway
Vent
Stack
Locker
Berthing (4)
Head
Berthing (2)
Passageway
Messhall
Galley
Head
Berthing (2)
Passageway
Berthing (2)
Berthing (2)
Freezer
Stores
Chain Lockers
Void
Air Cond. (On Deck)
Bridge
Ship Control
Navigation
Conning Station Stbd.
Catwalk
Electronics Laboratory
Lounge/Lab/Storage/Workshop
Lounge/Library
Berthing (4)
Head
Head
Berthing (4)
Passageway
Stores
5/16" Winch
1/4" Winch
Open Down to Main Deck
Open Down to Main Deck
Open Walkway
Stack
Vent
Air Cond.
Vent
Stack
Elect. Stores
Radio Room & Electronics Workshop
Air Cond.
Master's Berthing (1)
Passageway
Head
Berthing (2)
Berthing (2)
Winch/Windlass

R/V GYRE

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             GYRE                         LAST CHANGED 16 JAN 87

            OPS SCHEDULE FOR PERIOD
            01 JAN 87 THRU 31 DEC 87
     ...................................................
OCEANOGRAPHIC RESEARCH          MORSE

DEP: 04 JAN 87 LA GUAIRA          GEOCHEMICAL
ARR: 13 JAN 87 LA GUAIRA          CARIBBEAN                       10 DAY(S)
AREA INDEX: NA9
     ...................................................
OCEANOGRAPHIC RESEARCH          POWELL/BROOKS

DEP: 15 JAN 87 LA GUAIRA
ARR: 22 JAN 87 CORPUS CHRISTI     GULF OF MEXICO                   8 DAY(S)
AREA INDEX: NA9

DEP: 25 JAN 87 CORPUS CHRISTI
ARR: 09 FEB 87 GALVESTON          GULF OF MEXICO                  16 DAY(S)
AREA INDEX: NA9
     ...................................................
OUT OF SERVICE

DEP: 23 FEB 87 GALVESTON
ARR: 27 FEB 87 GALVESTON          INSURV                           5 DAY(S)
AREA INDEX: NA9
     ...................................................
OCEANOGRAPHIC RESEARCH

DEP: 04 MAR 87 GALVESTON          G & G
ARR: 15 MAR 87 GALVESTON          STUDENT TRAINING/RESEARCH       12 DAY(S)
AREA INDEX: NA9

DEP: 21 MAR 87 GALVESTON
ARR: 25 MAR 87 GALVESTON          STUDENT TRAINING/RESEARCH        5 DAY(S)
AREA INDEX: NA9
     ...................................................
OUT OF SERVICE

DEP: 26 MAR 87 GALVESTON
ARR: 07 OCT 87 GALVESTON          LAID UP                        196 DAY(S)
AREA INDEX: NA9
     ...................................................
OCEANOGRAPHIC RESEARCH          J. MORSE

DEP: 08 OCT 87 GALVESTON          GEOCHEMICAL
ARR: 25 OCT 87 GALVESTON          CARIBBEAN/GULF OF MEXICO        18 DAY(S)
AREA INDEX: NA9
     ...................................................
OCEANOGRAPHIC RESEARCH          POWELL

DEP: 30 OCT 87 GALVESTON
ARR: 03 NOV 87 GALVESTON          GULF OF MEXICO                   5 DAY(S)
AREA INDEX: NA9
     ...................................................
OCEANOGRAPHIC RESEARCH

DEP: 08 NOV 87 GALVESTON
ARR: 12 NOV 87 GALVESTON          STUDENT TRAINING AND RESEARCH    5 DAY(S)
AREA INDEX: NA9

DEP: 17 NOV 87 GALVESTON
ARR: 21 NOV 87 GALVESTON          STUDENT TRAINING/RESEARCH        5 DAY(S)
AREA INDEX: NA9

DEP: 26 NOV 87 GALVESTON          BIOLOGY
ARR: 07 DEC 87 GALVESTON          STUDENT TRAINING/RESEARCH       12 DAY(S)
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AREA INDEX: NA9
      ........................................
OUT OF SERVICE

DEP: 08 DEC 87 GALVESTON
ARR: 31 DEC 87 GALVESTON          UPKEEP                        24 DAY(S)
AREA INDEX: NA9
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FRED H MOORE

POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC: WILLIAM H MITCHELL
POC OFFICE: MARINE OPERATIONS SUPERINTENDENT
POC ORGANIZATION: INSTITUTE FOR GEOPHYSICS, UNIV OF TX
POC ADDRESS: 700 THE STRAND
POC CITY/STATE: GALVESTON TX 77550
FTS PREFIX: 409
COMMERCIAL AREA CODE: 409
PHONE: 761-2276

ADMINISTRATIVE DETAILS

COMMON SHIP NAME: MOORE
DESIGNATOR: RV
CLASS: SEISMIC/GEN. OCEANOGRAPHY
CALL SIGN (INTERNATIONAL):
FLEET: UNOLS
SHIP TYPE: MARINE GEOPHYSICS RESEARCH
SHIP OWNER: UNIV. OF TEXAS
CERTIFICATION AUTHORITY: AMERICAN BUREAU OF SHIPPING
FLAG REGISTRY: USA
HOME PORT: GALVESTON TX USA
TECHNICAL SPONSOR: U. OF TX. INST. FOR GEOPHYSICS
OPERATIONS CONTROL: U. OF TX. INST. FOR GEOPHYSICS
CONTRACTUAL INFORMATION: NONE
OPERATING COST/DAY: 8.0/87 THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT: 19
NUMBER OFFICERS: 6
NUMBER IN CREW: 4
MAX SEA STATE: 5 BEAUFORT SCALE
ENDURANCE: 40 DAY(S)
LIMITING FACTOR: REFRIGERATED STORES
BUILDER: BURTON SHIP BUILDING
WHERE BUILT: PORT ARTHUR TX USA
INITIAL COST: -
DUE DATE: '00
KEEL DATE: '00
LAUNCH DATE: '00
DELIVERY DATE: '67
COMMISSION DATE: '00
CONVERSION DATE: '00
LAST OVERHAUL: '87
MAINTENANCE CYCLE: 2.0 YEARS
END OF LIFE: 1989
UPDATE OF INFORMATION: 07 JAN 87

SHIP DIMENSIONS

LENGTH: 165.0 FEET
MAX BEAM: 38.0 FEET
HEIGHT: 79.0 FEET
GROSS TONNAGE: 297
DISPLACEMENT: 1202 TONS
DRAUGHT: 11.4 FEET
CRUISE SPEED: 9.5 KNOTS
RANGE: 7500 NAUTICAL MILES
MAX SPEED: 11.5 KNOTS
MIN SPEED: 3.9 KNOTS

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     ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:                   DIESEL GEARED
AUXILIARY PROPULSION:              NONE
NUMBER OF SHAFTS:                  2
BOW THRUSTER:                      NO
ACTIVE RUDDER:                     N
DYNAMIC POSITIONING:               N
ANTI-ROLL:                         Y
STABILIZER:                        N
DEEP ANCHOR:                         630 FEET
BERTHING VAN DIMENSIONS:           8X8X20
INSTRUMENT VAN DIMENSIONS:         8X8X20
WET-LAB:                           N
DRY-LAB:                           Y
AMMUNITION STORAGE:                Y
HELO SUPPORT:                      N
METEOROLOGICAL OBSERVATIONS:       N
UTILITY BOATS:
    1. 15 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:              20000 POUNDS
  NUMBER OF FRAMES:                1
CRANES OR BOOMS
  MAX HOIST CAPACITY:              12000 POUNDS
  NUMBER OF CRANES:                2
WINCHES:
    01. MAJOR TYPE/USE:            CORING
        SECONDARY TYPE/USE:        DREDGE
        SLIP-RINGS:                N
        WIRE TYPE:                 WIRE ROPE
        WIRE LENGTH:               30000 FEET
        WIRE DIAMETER:             0.500 INCHES

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     ELECTRONIC EQUIPMENT

COMPUTERS:                          2-PDP 11/34
FACSIMILE:                          Y
ELECTROMAGNETIC LOG:                Y
INERTIAL NAVIGATION:                N
RADAR (SURFACE SCAN):               Y
LORAN A:                            N
LORAN C:                            Y
OMEGA:                              N
SATELLITE NAVIGATION:               Y
RADIO TELETYPE COMMUNICATION:       N
SINGLE SIDE BAND:                   Y
VHF COMMUNICATIONS:                 Y
STABLE TABLE:                       N
NARROW BEAM:                        N
SEISMIC PROFILING:                  Y
SIDE SCAN:                          N
SOUNDING SYSTEM (SHALLOW):          BENMAR
SOUNDING SYSTEM (DEEP):             RAYTHEON

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     FUEL DETAILS

FUEL CAPACITY:                        62200 GALLONS
FUEL TYPE:                                  DIESEL #2
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:          1500 GAL/24-HRS
    DURING AVERAGE OPERATIONS:         1200 GAL/24-HRS
    DURING INPORT OPERATIONS:           300 GAL/24-HRS

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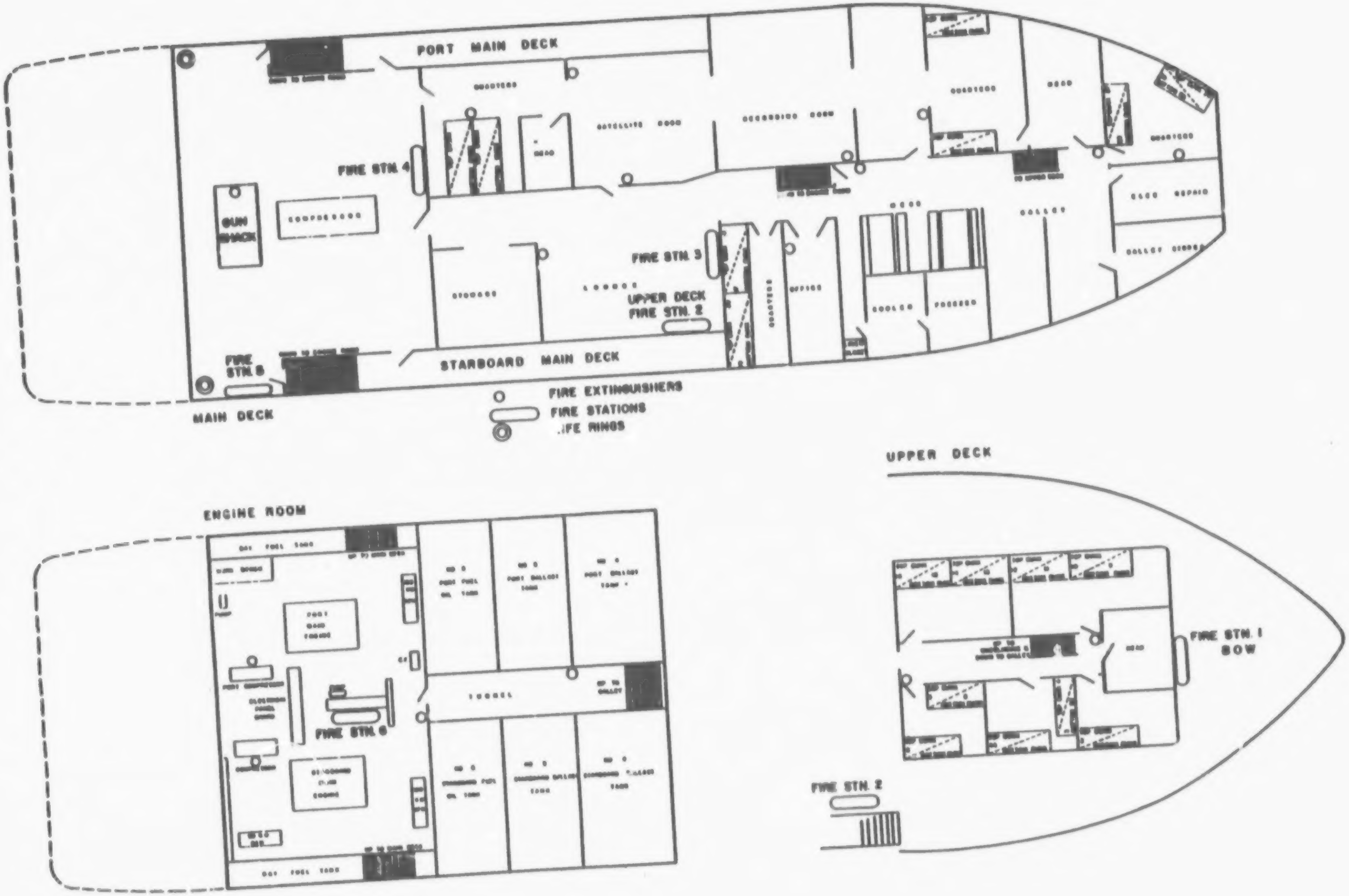
PORT MAIN DECK
FIRE STN 4
GUN SHACK
FIRE STN 3
UPPER DECK FIRE STN 2
STARBOARD MAIN DECK
FIRE STN 5
MAIN DECK
FIRE EXTINGUISHERS
FIRE STATIONS
LIFE RINGS
UPPER DECK
ENGINE ROOM
FIRE STN 6
TUNNEL
FIRE STN 1 BOW
FIRE STN 2

R/V FRED H. MOORE

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               FRED H MOORE           LAST CHANGED 21 JAN 87

              OPS SCHEDULE FOR PERIOD
              01 JAN 87 THRU 31 DEC 87
     ....................................
OVERHAUL                      MITCHELL          UTX

DEP: 05 JAN 87 GALVESTON
ARR: 06 FEB 87 GALVESTON        SHIPYARD                   33 DAY(S)
AREA INDEX: NA9
     ....................................
OCEANOGRAPHIC RESEARCH        SHIPLEY           NSF

DEP: 09 FEB 87 GALVESTON                                  (F)
ARR: 11 FEB 87 GALVESTON        GULF OF MEXICO              3 DAY(S)
AREA INDEX: NA9
     ....................................
OCEANOGRAPHIC RESEARCH        BEHRENS           STATE

DEP: 13 FEB 87 GALVESTON                                  (F)
ARR: 24 FEB 87 GALVESTON        STUDENT TRAINING           12 DAY(S)
AREA INDEX: NA9
     ....................................
TRANSIT                                         NSF

DEP: 16 MAR 87 GALVESTON
ARR: 27 MAR 87 BALBOA           TRANSIT                    12 DAY(S)
AREA INDEX: NA9   NP13
     ....................................
OCEANOGRAPHIC RESEARCH        SHIPLEY           NSF

DEP: 30 MAR 87 BALBOA           3-D MCS                   (F)
ARR: 28 APR 87 PUNTARENAS       WEST COSTA RICA            30 DAY(S)
AREA INDEX: NP13
     ....................................
TRANSIT                                         NSF/ODP

DEP: 02 MAY 87 PUNTARENAS
ARR: 20 MAY 87 OAHU             TRANSIT                    19 DAY(S)
AREA INDEX: NP13  NP12

DEP: 23 MAY 87 OAHU
ARR: 08 JUN 87 YOKOHAMA         TRANSIT                    17 DAY(S)
AREA INDEX: NP12  NP7   NP8   NP11
     ....................................
OCEANOGRAPHIC RESEARCH        B. TAYLOR         NSF/ODP

DEP: 12 JUN 87 YOKOHAMA         (HIG)                     (F)
ARR: 06 JUL 87 SHIKOKU          MCS                        25 DAY(S)
AREA INDEX: NP7
     ....................................
UPKEEP                                          NSF/ODP

DEP: 10 JUL 87 SHIKOKU
ARR: 31 JUL 87 SHIKOKU          MAINTENANCE AVAILABILITY   22 DAY(S)
AREA INDEX: NP7
     ....................................
OCEANOGRAPHIC RESEARCH        G. MOORE (TULSA)  NSF/ODP

DEP: 01 AUG 87 SHIKOKU          JAPAN/US COOP, 2-SHIP     (F)
ARR: 23 AUG 87 MANILA           MCS, NANKAI TROUGH         23 DAY(S)
AREA INDEX: NP7   NP10
     ....................................
OCEANOGRAPHIC RESEARCH        R. THUNELL (S.C.) NSF

DEP: 28 AUG 87 MANILA                                     (F)
ARR: 14 SEP 87 MANILA           CORING-S. CHINA-SULU SEA   18 DAY(S)
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AREA INDEX: NP10
      .........................................
OCEANOGRAPHIC RESEARCH           E. SILVER (UCSC)        NSF/ODP

DEP: 18 SEP 87 MANILA                (UC SANTA CRUZ)              (F)
ARR: 07 OCT 87 DARWIN              MCS-EASTERN SUNDA FOREARC        20 DAY(S)
AREA INDEX: NP10  IN5
      .........................................
TRANSIT                                                  NSF/ODP

DEP: 11 OCT 87 DARWIN
ARR: 20 OCT 87 GUAM                TRANSIT                          10 DAY(S)
AREA INDEX: IN5   NP10
      .........................................
OCEANOGRAPHIC RESEARCH           LARSON (URI)            NSF/ODP

DEP: 23 OCT 87 GUAM                SHIPLEY                         (F)
ARR: 26 NOV 87 MAJURO              MCS   W. PACIFIC                 35 DAY(S)
AREA INDEX: NP10  NP11
      .........................................
TRANSIT                                                  NSF/ODP

DEP: 29 NOV 87 MAJURO
ARR: 06 DEC 87 OAHU                TRANSIT                           8 DAY(S)
AREA INDEX: NP11  NP12
      .........................................
OUT OF SERVICE                                           UTX

DEP: 10 DEC 87 OAHU
ARR: 31 DEC 87 OAHU                UPKEEP                           22 DAY(S)
AREA INDEX: NP12
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              LONGHORN
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     POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC:                       MR JOHN H THOMPSON
POC OFFICE:                ASSOCIATE DIRECTOR FOR ADMIN
POC ORGANIZATION:          MARINE SCIENCE LABORATORY
POC ADDRESS:               UNIV. OF TEXAS
POC CITY/STATE:            PORT ARANSAS TX 78373
COMMERCIAL AREA CODE:      512
PHONE:                     749-6760

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         ADMINISTRATIVE DETAILS

DESIGNATOR:                     RV
CLASS:                          TRAWLER
CALL SIGN (INTERNATIONAL):      WZL3621
FLEET:                          UNOLS
SHIP TYPE:                      OCEAN RESEARCH-GENERAL
SHIP OWNER:                     UNIV. OF TEXAS
CERTIFICATION AUTHORITY:        TEXAS PARKS & WILDLIFE
FLAG REGISTRY:                  USA
HOME PORT:                      PORT ARANSAS TX
TECHNICAL SPONSOR:              UNIV. OF TEXAS
OPERATIONS CONTROL:             U.TEX.-PORT ARANSAS MARINE LAB
CONTRACTUAL INFORMATION:        NONE
OPERATING COST/DAY:             2.0/87                 THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT:           10
NUMBER OFFICERS:                 3
NUMBER IN CREW:                    4
MAX SEA STATE:                   3 BEAUFORT SCALE
ENDURANCE:                       18 DAY(S)
LIMITING FACTOR:                WATER-REFRIG. STORES
BUILDER:                        ALLIED SHIPYARD
WHERE BUILT:                    LAROSE, LA USA
INITIAL COST:                   -
DUE DATE:                       '00
KEEL DATE:                      '00
LAUNCH DATE:                    '71
DELIVERY DATE:                  '71
COMMISSION DATE:                '71
CONVERSION DATE:                '86
LAST OVERHAUL:                  '86
MAINTENANCE CYCLE:              1.6 YEARS
END OF LIFE:                    1990
UPDATE OF INFORMATION:          22 JAN 87

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        SHIP DIMENSIONS

LENGTH:               102.8 FEET
MAX BEAM:             24.2 FEET
HEIGHT:               -      FEET
GROSS TONNAGE:          175
DISPLACEMENT:           210 TONS
DRAUGHT:               7.3 FEET
CRUISE SPEED:          9.0 KNOTS
RANGE:                 2000 NAUTICAL MILES
MAX SPEED:             9.5 KNOTS
MIN SPEED:             1.5 KNOTS

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ENGINEERING/DECK EQUIPMENT

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MAIN PROPULSION:                  DIESEL GEARED
AUXILIARY PROPULSION:             NO
NUMBER OF SHAFTS.                 2
BOW THRUSTER:                     HYDRAULIC, TUNNEL
ACTIVE RUDDER:                    N
DYNAMIC POSITIONING:              N
ANTI-ROLL:                        N
STABILIZER:                       N
DEEP ANCHOR:                      NONE  FEET
BERTHING VAN DIMENSIONS:          20X8X8
INSTRUMENT VAN DIMENSIONS:        20X8X8
WET-LAB:                          Y
DRY-LAB:                          Y
AMMUNITION STORAGE:               N
HELO SUPPORT:                     N
METEOROLOGICAL OBSERVATIONS:      NO
UTILITY BOATS:
    1. 16 FOOT RUBBER INFLATABLE
    2. 12 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:              2000 POUNDS
  NUMBER OF FRAMES:               1
CRANES OR BOOMS
  MAX HOIST CAPACITY:              7500 POUNDS
  NUMBER OF CRANES:               1
WINCHES:
    01. MAJOR TYPE/USE:           TRAWL
        SECONDARY TYPE/USE:
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:               4000 FEET
        WIRE DIAMETER:            0.500 INCHES
    02. MAJOR TYPE/USE:           HYDROGRAPHIC
        SECONDARY TYPE/USE:       UTILITY
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:               1500 FEET
        WIRE DIAMETER:            0.250 INCHES
    03. MAJOR TYPE/USE:           HYDROGRAPHIC
        SECONDARY TYPE/USE:       UTILITY
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:               1500 FEET
        WIRE DIAMETER:            0.250 INCHES
    04. MAJOR TYPE/USE:           CORING
        SECONDARY TYPE/USE:       UTILITY
        SLIP-RINGS:               N
        WIRE TYPE:                WIRE ROPE
        WIRE LENGTH:               3000 FEET
        WIRE DIAMETER:            0.250 INCHES
    05. MAJOR TYPE/USE:           HYDROGRAPHIC
        SECONDARY TYPE/USE:
        SLIP-RINGS:               1
        WIRE TYPE:                CONDUCTOR CABLE
        WIRE LENGTH:              10000 FEET
        WIRE DIAMETER:            0.218 INCHES

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ELECTRONIC EQUIPMENT

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COMPUTERS:                         IBM-PC
FACSIMILE:                         N
ELECTROMAGNETIC LOG:               N
INERTIAL NAVIGATION:               N
RADAR (SURFACE SCAN):              Y
LORAN A:                           Y
LORAN C:                           Y
OMEGA:                             N
SATELLITE NAVIGATION:              N
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  RADIO TELETYPE COMMUNICATION:   N
  SINGLE SIDE BAND:               Y
  VHF COMMUNICATIONS:             Y
  STABLE TABLE:                   N
  NARROW BEAM:                    N
  SEISMIC PROFILING:              N
  SIDE SCAN:                      N
  SOUNDING SYSTEM (SHALLOW):      MORROW
  SOUNDING SYSTEM (DEEP):         FURUNO

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       FUEL DETAILS

  FUEL CAPACITY:                   11000 GALLONS
  FUEL TYPE:                             DIESEL #2/DIESEL #1
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:      950 GAL/24-HRS
      DURING AVERAGE OPERATIONS:     400 GAL/24-HRS
      DURING INPORT OPERATIONS:      140 GAL/24-HRS

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                 LONGHORN                 LAST CHANGED 30 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      .......................................
OCEANOGRAPHIC RESEARCH                                UNIV. OF TEXAS

DEP: 01 JAN 87 PORT ARANSAS TX    SCHEDULE NOT RECEIVED IN TIME TO PUBLISH
ARR: 31 DEC 87 PORT ARANSAS TX    CONTACT POC FOR MORE INFO     365 DAY(S)
AREA INDEX: NA9
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THOMAS G THOMPSON

POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC: CAPT K W JEFFERS
POC OFFICE: MARINE SUPERINTENDENT
POC ORGANIZATION: SCHOOL OF OCEANOGRAPHY, WB-10
POC ADDRESS: UNIV. OF WASHINGTON
POC CITY/STATE: SEATTLE WA 98195
FTS PREFIX: 206
COMMERCIAL AREA CODE: 206
PHONE: 543-5062

ADMINISTRATIVE DETAILS

COMMON SHIP NAME: THOMPSON
DESIGNATOR: AGOR 9
CLASS: ROBERT D CONRAD/AGOR 3
CALL SIGN (INTERNATIONAL): KGWT
FLEET: UNOLS
SHIP TYPE: OCEAN RESEARCH-GENERAL
SHIP OWNER: USN
CERTIFICATION AUTHORITY: USCG INSPECTED/ABS CLASSED
FLAG REGISTRY: NONE
HOME PORT: SEATTLE WA
TECHNICAL SPONSOR: UNIV. OF WASHINGTON
OPERATIONS CONTROL: UNIV. OF WASHINGTON
CONTRACTUAL INFORMATION: ONR CODE 613 LEASE TO EXPIRE 20 SEP 90 CON # - N00014-85-L-0738
OPERATING COST/DAY: 11.0/87 THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT: 22
NUMBER OFFICERS: 9
NUMBER IN CREW: 13
MAX SEA STATE: 5 BEAUFORT SCALE
ENDURANCE: 35 DAY(S)
LIMITING FACTOR: FUEL
BUILDER: MARINETTE MARINE CORPORATION
WHERE BUILT: MARINETTE WI USA
INITIAL COST: 3.0/65 MILLION $'S IN YEAR
DUE DATE: '00
KEEL DATE: 12 SEP 63
LAUNCH DATE: 18 JUL 64
DELIVERY DATE: 04 SEP 65
COMMISSION DATE: '00
CONVERSION DATE: '00
LAST OVERHAUL: 01 JAN 87
MAINTENANCE CYCLE: 2.0 YEARS
END OF LIFE: 1994
UPDATE OF INFORMATION: 07 JAN 87

SHIP DIMENSIONS

LENGTH: 208.8 FEET
MAX BEAM: 39.4 FEET
HEIGHT: 87.0 FEET
GROSS TONNAGE: 1151
DISPLACEMENT: 1401 TONS
DRAUGHT: 15.0 FEET
CRUISE SPEED: 10.5 KNOTS
RANGE: 8500 NAUTICAL MILES
MAX SPEED: 11.5 KNOTS
MIN SPEED: 0.5 KNOTS

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    ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:                    DIESEL ELECTRIC
AUXILIARY PROPULSION:               DIESEL ELECTRIC
NUMBER OF SHAFTS:                   1
BOW THRUSTER:                       TRAINABLE/RETRACTABLE
ACTIVE RUDDER:                      N
DYNAMIC POSITIONING:                N
ANTI-ROLL:                          N
STABILIZER:                         N
DEEP ANCHOR:                        NONE  FEET
BERTHING VAN DIMENSIONS:            NONE
INSTRUMENT VAN DIMENSIONS:          8X8X20
WET-LAB:                            Y
DRY-LAB:                            Y
AMMUNITION STORAGE:                 Y
HELO SUPPORT:                       N
METEOROLOGICAL OBSERVATIONS:        Y
UTILITY BOATS:
    1. 16 FOOT SKIFF
A, U, OR L FRAMES
  MAX HOIST CAPACITY:                6000 POUNDS
  NUMBER OF FRAMES:                 1
CRANES OR BOOMS
  MAX HOIST CAPACITY:               10000 POUNDS
  NUMBER OF CRANES:                 3
WINCHES:
    01. MAJOR TYPE/USE:             HYDROGRAPHIC
        SECONDARY TYPE/USE:         CTD
        SLIP-RINGS:                 1
        WIRE TYPE:                  WIRE ROPE
        WIRE LENGTH:                30000 FEET
        WIRE DIAMETER:              0.250 INCHES
        SECONDARY WIRE TYPE:        CONDUCTOR CABLE
        SECONDARY WIRE LEN:         25000 FEET
        SECONDARY WIRE DIAM:        0.225 INCHES
    02. MAJOR TYPE/USE:             CTD
        SECONDARY TYPE/USE:
        SLIP-RINGS:                 1
        WIRE TYPE:                  CONDUCTOR CABLE
        WIRE LENGTH:                33000 FEET
        WIRE DIAMETER:              0.322 INCHES
    03. MAJOR TYPE/USE:             CORING
        SECONDARY TYPE/USE:         TRAWL
        SLIP-RINGS:                 1
        WIRE TYPE:                  WIRE ROPE
        WIRE LENGTH:                30000 FEET
        WIRE DIAMETER:              0.500 INCHES
        SECONDARY WIRE TYPE:        CONDUCTOR CABLE
        SECONDARY WIRE LEN:         20000 FEET
        SECONDARY WIRE DIAM:        0.680 INCHES

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    ELECTRONIC EQUIPMENT

COMPUTERS:                          HARRIS,HP85,TI,IBMAT
FACSIMILE:                          Y
ELECTROMAGNETIC LOG:                N
INERTIAL NAVIGATION:                N
RADAR (SURFACE SCAN):               Y
LORAN A:                            N
LORAN C:                            Y
OMEGA:                              N
SATELLITE NAVIGATION:               Y
RADIO TELETYPE COMMUNICATION:       Y
SINGLE SIDE BAND:                   Y
VHF COMMUNICATIONS:                 Y
STABLE TABLE:                       N
NARROW BEAM:                        N
SEISMIC PROFILING:                  Y
SIDE SCAN:                          N
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SOUNDING SYSTEM (SHALLOW):      ROSS, FURUNO
SOUNDING SYSTEM (DEEP):         RAYTH.,GIFFT

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     FUEL DETAILS

FUEL CAPACITY:                    75000 GALLONS
FUEL TYPE:                              DIESEL#2/DIESEL#1/JP5+#2D
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:      1500 GAL/24-HRS
    DURING AVERAGE OPERATIONS:     1200 GAL/24-HRS
    DURING INPORT OPERATIONS:       550 GAL/24-HRS

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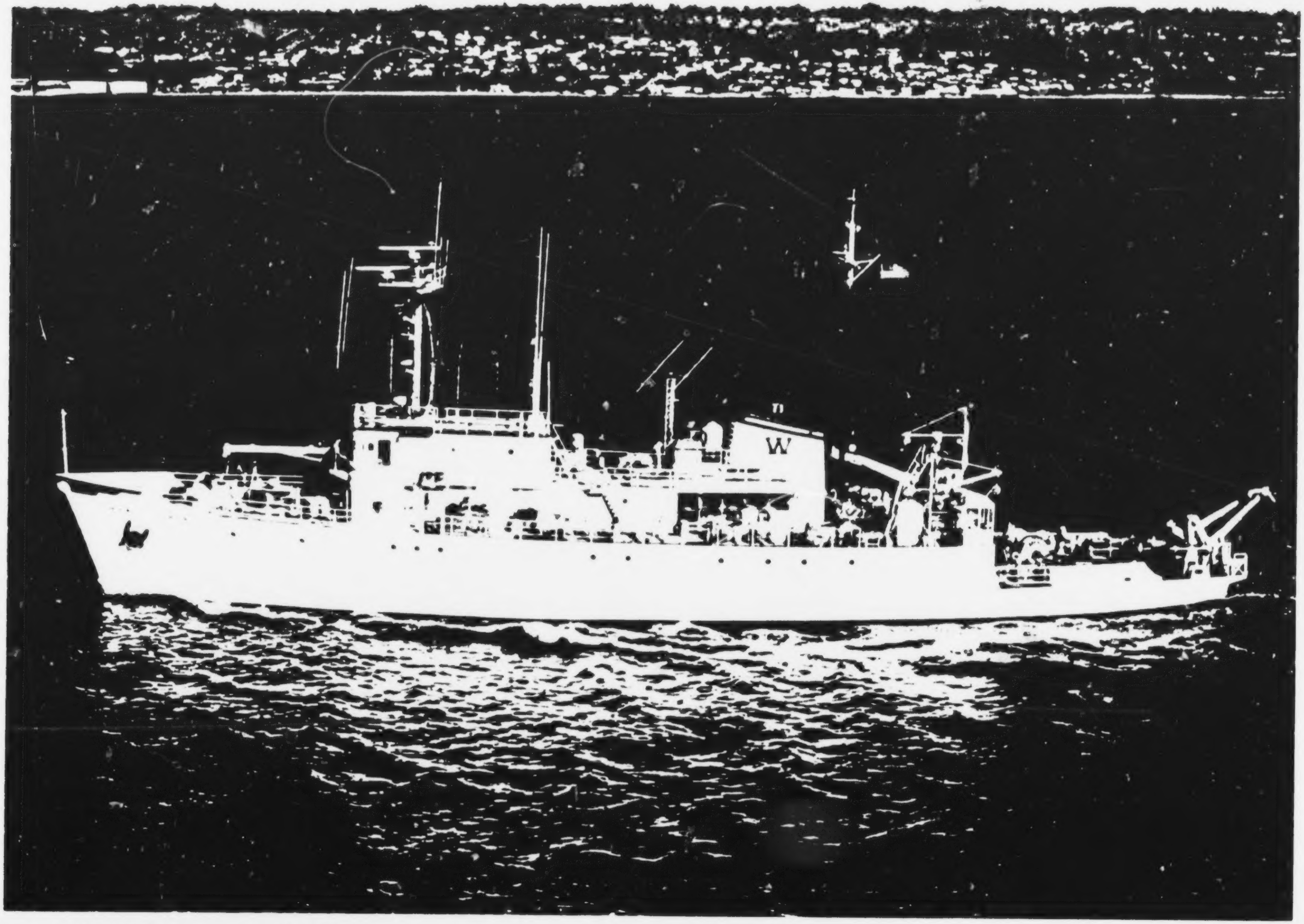
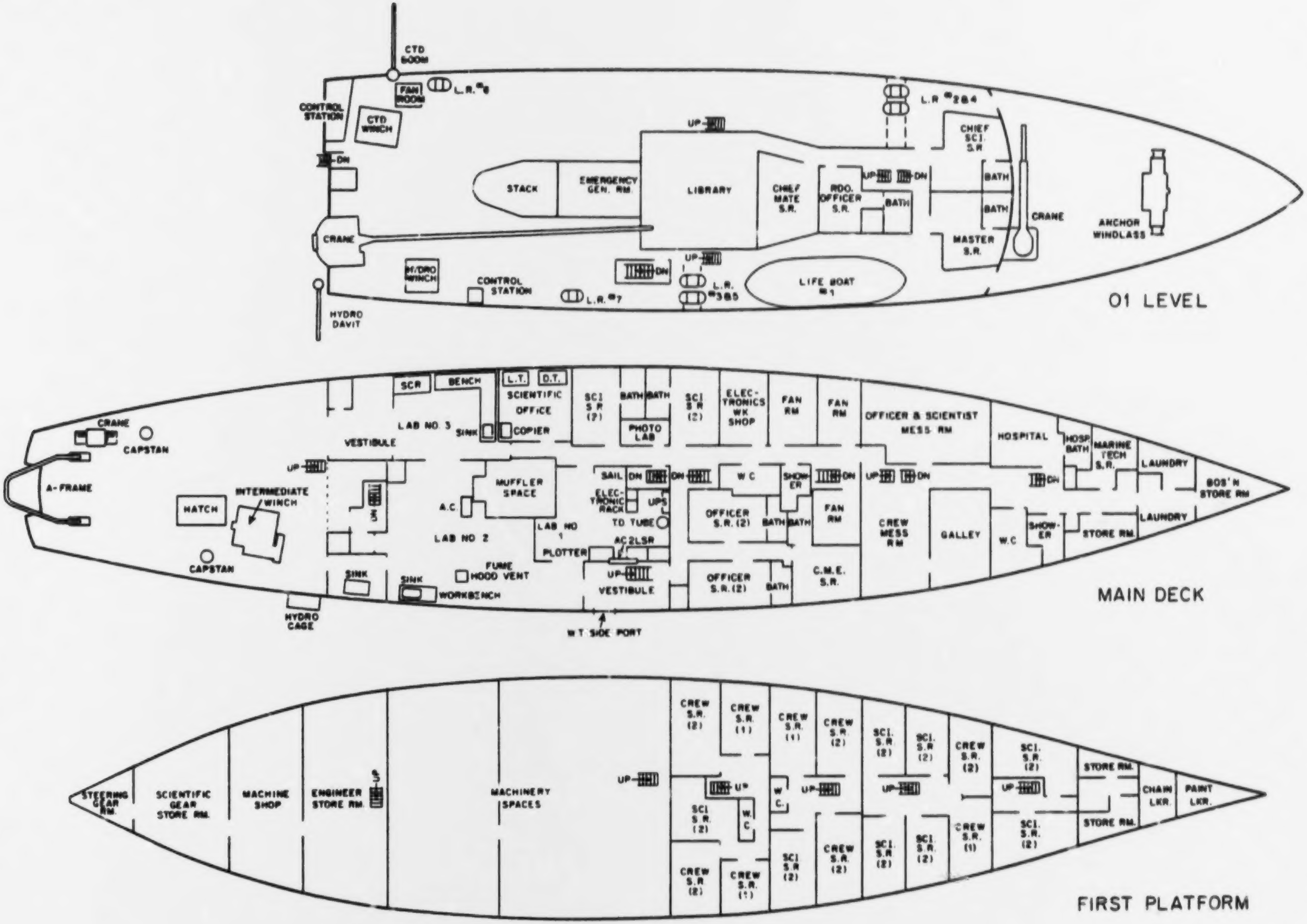


R/V THOMAS G. THOMPSON


CTD BOOM
FAN ROOM
L.R. #6
CONTROL STATION
CTD WINCH
DN
UP
L.R. #2&4
CHIEF SCI. S.R.
STACK
EMERGENCY GEN. RM.
LIBRARY
CHIEF MATE S.R.
RDO. OFFICER S.R.
BATH
BATH
BATH
CRANE
ANCHOR WINDLASS
MASTER S.R.
CRANE
HYDRO WINCH
CONTROL STATION
L.R. #7
L.R. #3&5
LIFE BOAT #1
HYDRO DAVIT
01 LEVEL
SCR
BENCH
L.T.
D.T.
SCIENTIFIC OFFICE
SCI S.R. (2)
BATH
BATH
PHOTO LAB
SCI S.R. (2)
ELEC-TRONICS WK SHOP
FAN RM
FAN RM
OFFICER & SCIENTIST MESS RM
HOSPITAL
HOSP. BATH
MARINE TECH S.R.
LAUNDRY
BOS'N STORE RM
CRANE
CAPSTAN
VESTIBULE
LAB NO. 3
SINK
COPIER
A-FRAME
HATCH
INTERMEDIATE WINCH
MUFFLER SPACE
A.C.
SAIL
ELEC-TRONIC RACK
UPS
TO TUBE
W C
SHOW-ER
OFFICER S.R. (2)
BATH
BATH
FAN RM
CREW MESS RM
GALLEY
W.C
SHOW-ER
STORE RM.
LAUNDRY
LAB NO 2
LAB NO 1
PLOTTER
AC2LSR
CAPSTAN
SINK
SINK
FUME HOOD VENT
WORKBENCH
VESTIBULE
OFFICER S.R. (2)
BATH
C.M.E. S.R.
HYDRO CAGE
W.T. SIDE PORT
MAIN DECK
STEERING GEAR RM.
SCIENTIFIC GEAR STORE RM.
MACHINE SHOP
ENGINEER STORE RM.
MACHINERY SPACES
CREW S.R. (2)
CREW S.R. (1)
CREW S.R. (1)
CREW S.R. (2)
SCI. S.R. (2)
SCI. S.R. (2)
CREW S.R. (2)
SCI. S.R. (2)
STORE RM.
CHAIN LKR.
PAINT LKR.
SCI S.R. (2)
W. C.
W C.
CREW S.R. (2)
CREW S.R. (1)
SCI S.R. (2)
CREW S.R. (2)
SCI. S.R. (2)
SCI. S.R. (2)
CREW S.R. (1)
SCI. S.R. (2)
STORE RM.
FIRST PLATFORM

R/V THOMAS G. THOMPSON

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                THOMAS G THOMPSON          LAST CHANGED 21 JAN 87

                   OPS SCHEDULE FOR PERIOD
                   01 JAN 87 THRU 31 DEC 87

     ...................................................
OUT OF SERVICE                                            U WA

DEP: 09 FEB 87 SEATTLE
ARR: 13 FEB 87 SEATTLE               INSURV                              5 DAY(S)
AREA INDEX: NP9
     ...................................................
TRANSIT

DEP: 12 MAR 87 SEATTLE
ARR: 21 MAR 87 HONOLULU              TRANSIT                            10 DAY(S)
AREA INDEX: NP9   NP12
     ...................................................
OCEANOGRAPHIC RESEARCH               GREGG                NSF

DEP: 24 MAR 87 HONOLULU
ARR: 28 APR 87 MONTEREY              TROPIC HEAT                        36 DAY(S)
AREA INDEX: NP12  NP9
     ...................................................
OCEANOGRAPHIC RESEARCH               MARTIN               NSF

DEP: 02 MAY 87 MONTEREY
ARR: 16 MAY 87 MONTEREY              VERTEX                             15 DAY(S)
AREA INDEX: NP9
     ...................................................
TRANSIT

DEP: 18 MAY 87 MONTEREY
ARR: 22 MAY 87 SEATTLE               TRANSIT                             5 DAY(S)
AREA INDEX: NP9
     ...................................................
OCEANOGRAPHIC RESEARCH               EMERSON              NSF

DEP: 28 MAY 87 SEATTLE
ARR: 26 JUN 87 SEWARD                SUPER                              30 DAY(S)
AREA INDEX: NP9   NP6
     ...................................................
OCEANOGRAPHIC RESEARCH               MCROY                NSF

DEP: 30 JUN 87 SEWARD
ARR: 17 JUL 87 NOME                  ISHTAR                             18 DAY(S)
AREA INDEX: NP6   NP2   NP5

DEP: 18 JUL 87 NOME
ARR: 09 AUG 87 NOME                  ISHTAR                             23 DAY(S)
AREA INDEX: NP2

DEP: 11 AUG 87 NOME
ARR: 30 AUG 87 NOME                  ISHTAR                             20 DAY(S)
AREA INDEX: NP2
     ...................................................
TRANSIT

DEP: 31 AUG 87 NOME
ARR: 06 SEP 87 SEWARD                TRANSIT                             7 DAY(S)
AREA INDEX: NP2   NP6   NP5
     ...................................................
OCEANOGRAPHIC RESEARCH               MILLER               NSF

DEP: 10 SEP 87 SEWARD
ARR: 07 OCT 87 SEWARD                SUPER                              28 DAY(S)
AREA INDEX: NP6
     ...................................................
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OCEANOGRAPHIC RESEARCH              MCROY                    NSF

DEP: 11 OCT 87 SEWARD
ARR: 05 NOV 87 SEWARD                 ISHTAR                                26 DAY(S)
AREA INDEX: NP6
             . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
TRANSIT

DEP: 08 NOV 87 SEWARD
ARR: 13 NOV 87 SEATTLE                TRANSIT                                6 DAY(S)
AREA INDEX: NP6    NP9
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               CLIFFORD A BARNES
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                     CAPT J D KING
  POC OFFICE:              PORT CAPTAIN/ENGINEER
  POC ORGANIZATION:        SCHOOL OF OCEANOGRAPHY
  POC ADDRESS:             UNIV. OF WASHINGTON
  POC CITY/STATE:          SEATTLE WA  98195
  FTS PREFIX:              206
  COMMERCIAL AREA CODE:    206
  PHONE:                   543 5648

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           ADMINISTRATIVE DETAILS

  COMMON SHIP NAME:             BARNES
  DESIGNATOR:                   -
  CLASS:                        STEEL HULL UTILITY
  CALL SIGN (INTERNATIONAL):    -
  FLEET:                        UNOLS
  SHIP TYPE:                    OCEAN RESEARCH - GENERAL
  SHIP OWNER:                   NATIONAL SCIENCE FOUNDATION
  CERTIFICATION AUTHORITY:      -
  FLAG REGISTRY:                -
  HOME PORT:                    -
  TECHNICAL SPONSOR:            UNIV. OF WASHINGTON
  OPERATIONS CONTROL:           UNIV. OF WASHINGTON
  CONTRACTUAL INFORMATION:      NSF OCE 82-19239 EXPIRES 10/87
  OPERATING COST/DAY:            1.5/87                       THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:          6
  NUMBER OFFICERS:               0
  NUMBER IN CREW:                  2
  MAX SEA STATE:                 2 BEAUFORT SCALE
  ENDURANCE:                      7 DAY(S)
  LIMITING FACTOR:              CREW
  BUILDER:                      WESTERN BOAT BUILDING CORP.
  WHERE BUILT:                  TACOMA WA
  INITIAL COST:                 -
  DUE DATE:                     '00
  KEEL DATE:                    '00
  LAUNCH DATE:                  '00
  DELIVERY DATE:                '66
  COMMISSION DATE:              '00
  CONVERSION DATE:              '84
  LAST OVERHAUL:                '86
  MAINTENANCE CYCLE:            4.0 YEARS
  END OF LIFE:                  2004
  UPDATE OF INFORMATION:        08 JAN 87

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        SHIP DIMENSIONS

  LENGTH:             65.5 FEET
  MAX BEAM:          19.6 FEET
  HEIGHT:             27.0 FEET
  GROSS TONNAGE:     -
  DISPLACEMENT:         85 TONS
  DRAUGHT:            6.5 FEET
  CRUISE SPEED:       9.0 KNOTS
  RANGE:              1600 NAUTICAL MILES
  MAX SPEED:         10.0 KNOTS
  MIN SPEED:          1.5 KNOTS
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BEST COPY AVAILABLE

ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL GEARED
AUXILIARY PROPULSION: NO
NUMBER OF SHAFTS: 1
BOW THRUSTER: NO
ACTIVE RUDDER: N
DYNAMIC POSITIONING: N
ANTI-ROLL: N
STABILIZER: N
DEEP ANCHOR: NONE FEET
BERTHING VAN DIMENSIONS: NONE
INSTRUMENT VAN DIMENSIONS: NONE
WET-LAB: N
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: NO
UTILITY BOATS:
    1. 13 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY: - POUNDS
  NUMBER OF FRAMES: 0
CRANES OR BOOMS
  MAX HOIST CAPACITY: 4500 POUNDS
  NUMBER OF CRANES: 1
WINCHES:
    01. MAJOR TYPE/USE: OTHER
        SECONDARY TYPE/USE: UTILITY
        SLIP-RINGS: 1
        WIRE TYPE: CONDUCTOR CABLE
        WIRE LENGTH: 02000 FEET
        WIRE DIAMETER: 0.375 INCHES
    02. MAJOR TYPE/USE: HYDROGRAPHIC
        SECONDARY TYPE/USE: UNKNOWN
        SLIP-RINGS: N
        WIRE TYPE: WIRE ROPE
        WIRE LENGTH: 02000 FEET
        WIRE DIAMETER: 0.188 INCHES
    03. MAJOR TYPE/USE: ANCHOR
        SECONDARY TYPE/USE: UNKNOWN
        SLIP-RINGS: N
        WIRE TYPE: WIRE ROPE
        WIRE LENGTH: 01500 FEET
        WIRE DIAMETER: 0.500 INCHES
    04. MAJOR TYPE/USE: OTHER
        SECONDARY TYPE/USE: TRAWL
        SLIP-RINGS: N
        WIRE TYPE: WIRE ROPE
        WIRE LENGTH: 00600 FEET
        WIRE DIAMETER: 0.500 INCHES
    05. MAJOR TYPE/USE: OTHER
        SECONDARY TYPE/USE: TRAWL
        SLIP-RINGS: N
        WIRE TYPE: WIRE ROPE
        WIRE LENGTH: 00600 FEET
        WIRE DIAMETER: 0.500 INCHES
    06. MAJOR TYPE/USE: CTD
        SECONDARY TYPE/USE:
        SLIP-RINGS: 1
        WIRE TYPE: CONDUCTOR CABLE
        WIRE LENGTH: 01000 FEET
        WIRE DIAMETER: 0.322 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: NONE
FACSIMILE: N
ELECTROMAGNETIC LOG: N
INERTIAL NAVIGATION: N

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RADAR (SURFACE SCAN):           Y
LORAN A:                        N
LORAN C:                        Y
OMEGA:                          N
SATELLITE NAVIGATION:           N
RADIO TELETYPE COMMUNICATION:   N
SINGLE SIDE BAND:               Y
VHF COMMUNICATIONS:             Y
STABLE TABLE:                   N
NARROW BEAM:                    N
SEISMIC PROFILING:              Y
SIDE SCAN:                      N
SOUNDING SYSTEM (SHALLOW):      ROSS
SOUNDING SYSTEM (DEEP):         SIMRAD

   ------------------------------------

     FUEL DETAILS

FUEL CAPACITY:                    1920 GALLONS
FUEL TYPE:                             DIESEL #2
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:      220 GAL/24-HRS
    DURING AVERAGE OPERATIONS:     105 GAL/24-HRS
    DURING INPORT OPERATIONS:          GAL/24-HRS

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                 CLIFFORD A BARNES        LAST CHANGED 21 JAN 87
                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87
      .........................................
OCEANOGRAPHIC RESEARCH                                 U. WA
DEP: 01 JAN 87 SEATTLE            NUMEROUS SHORT TRIPS WITHIN PUGET
ARR: 31 DEC 87 SEATTLE            SOUND. CONTACT POC FOR DETAILS 365 DAY(S)
AREA INDEX: NP9
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              ATLANTIS II
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       POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                    MR D A MOLLER
  POC OFFICE:             MARINE OPERATIONS COORDINATOR
  POC ORGANIZATION:       MARINE OPERATIONS
  POC ADDRESS:            WOODS HOLE OCEANOGRAPHIC INST.
  POC CITY/STATE:         WOODS HOLE MA 02543
  COMMERCIAL AREA CODE:   617
  PHONE:                  548-1400

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                ADMINISTRATIVE DETAILS

  DESIGNATOR:                  RV
  CLASS:                       -
  CALL SIGN (INTERNATIONAL):   KADC
  FLEET:                       UNOLS
  SHIP TYPE:                   OCEAN RESEARCH-SUBMERS. TENDER
  SHIP OWNER:                  WOODS HOLE OCEANOGRAPHIC INST.
  CERTIFICATION AUTHORITY:     USCG
  FLAG REGISTRY:               USA
  HOME PORT:                   WOODS HOLE MA
  TECHNICAL SPONSOR:           WOODS HOLE OCEANOGRAPHIC INST.
  OPERATIONS CONTROL:          WOODS HOLE OCEANOGRAPHIC INST.
  CONTRACTUAL INFORMATION:     NONE
  OPERATING COST/DAY:          12.1/87                         THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:        25
  NUMBER OFFICERS:             -
  NUMBER IN CREW:                25
  MAX SEA STATE:               -  BEAUFORT SCALE
  ENDURANCE:                    30 DAY(S)
  LIMITING FACTOR:             -
  BUILDER:                     MARYLAND SHIPBUILDING AND DRYDOCK CO.
  WHERE BUILT:                 BALTIMORE MD USA
  INITIAL COST:                -
  DUE DATE:                    '00
  KEEL DATE:                   '00
  LAUNCH DATE:                 '62
  DELIVERY DATE:               31 JAN 63
  COMMISSION DATE:             '00
  CONVERSION DATE:             '00
  LAST OVERHAUL:               30 NOV 85
  MAINTENANCE CYCLE:           2.0 YEARS
  END OF LIFE:                 1993
  UPDATE OF INFORMATION:       07 JAN 87

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          SHIP DIMENSIONS

  LENGTH:             210.3 FEET
  MAX BEAM:           44.0 FEET
  HEIGHT:             -     FEET
  GROSS TONNAGE:       1529
  DISPLACEMENT:        2300 TONS
  DRAUGHT:            16.0 FEET
  CRUISE SPEED:       11.5 KNOTS
  RANGE:               9000 NAUTICAL MILES
  MAX SPEED:          13.0 KNOTS
  MIN SPEED:          -     KNOTS

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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL
AUXILIARY PROPULSION: DIESEL
NUMBER OF SHAFTS: 2
BOW THRUSTER: TRAINABLE
ACTIVE RUDDER: N
DYNAMIC POSITIONING: N
ANTI-ROLL: N
STABILIZER: N
DEEP ANCHOR: NONE FEET
BERTHING VAN DIMENSIONS: NO
INSTRUMENT VAN DIMENSIONS: NO
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: -
UTILITY BOATS:
1. 16 FOOT RUBBER INFLATABLE

A, U, OR L FRAMES
- MAX HOIST CAPACITY: 56000 POUNDS
- NUMBER OF FRAMES: 1

CRANES OR BOOMS
- MAX HOIST CAPACITY: 40000 POUNDS
- NUMBER OF CRANES: 1

WINCHES:

01. MAJOR TYPE/USE: TRAWL
    - SECONDARY TYPE/USE:
    - SLIP-RINGS:
    - WIRE TYPE: WIRE ROPE
    - WIRE LENGTH: 30000 FEET
    - WIRE DIAMETER: 0.500 INCHES
02. MAJOR TYPE/USE: HYDROGRAPHIC
    - SECONDARY TYPE/USE: UTILITY
    - SLIP-RINGS: Y
    - WIRE TYPE: WIRE ROPE
    - WIRE LENGTH: 30000 FEET
    - WIRE DIAMETER: 0.187 INCHES
    - SECONDARY WIRE TYPE: CONDUCTOR CABLE
    - SECONDARY WIRE LEN: 25000 FEET
    - SECONDARY WIRE DIAM: 0.303 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: N
FACSIMILE: Y
ELECTROMAGNETIC LOG: Y
INERTIAL NAVIGATION: N
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: N
SATELLITE NAVIGATION: Y
RADIO TELETYPE COMMUNICATION: N
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y
STABLE TABLE: N
NARROW BEAM: Y
SEISMIC PROFILING: -
SIDE SCAN: N
SOUNDING SYSTEM (SHALLOW): FURUNO
SOUNDING SYSTEM (DEEP): SEA BEAM EDO

FUEL DETAILS

FUEL CAPACITY: 90000 GALLONS
FUEL TYPE: MG-O

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  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:            GAL/24-HRS
      DURING AVERAGE OPERATIONS:           GAL/24-HRS
      DURING INPORT OPERATIONS:          - GAL/24-HRS

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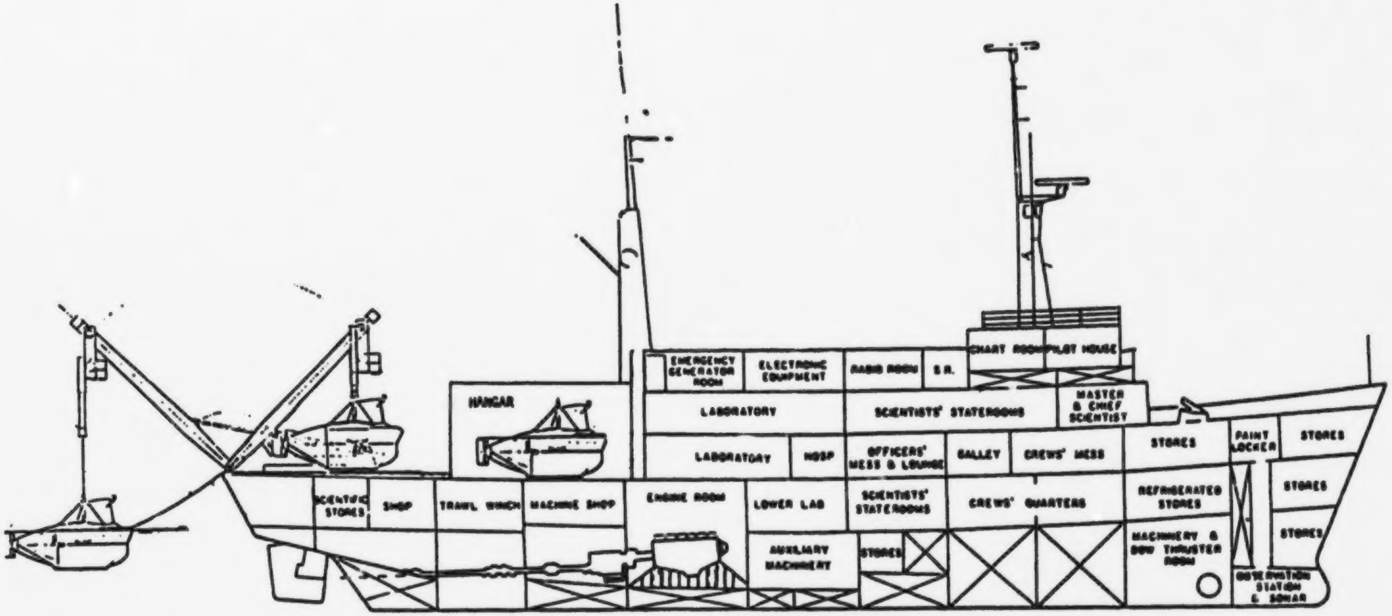
EMERGENCY GENERATOR ROOM
ELECTRONIC EQUIPMENT
RADIO ROOM
S.R.
CHART ROOM
PILOT HOUSE
HANGAR
LABORATORY
SCIENTISTS' STATEROOMS
MASTER & CHIEF SCIENTIST
LABORATORY
HOSP
OFFICERS' MESS & LOUNGE
GALLEY
CREWS' MESS
STORES
PAINT LOCKER
STORES
SCIENTIFIC STORES
SHOP
TRAWL WINCH
MACHINE SHOP
ENGINE ROOM
LOWER LAB
SCIENTISTS' STATEROOMS
CREWS' QUARTERS
REFRIGERATED STORES
STORES
AUXILIARY MACHINERY
STORES
MACHINERY & BOW THRUSTER ROOM
STORES
OBSERVATION STATION & SONAR

R/V ATLANTIS II

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                ATLANTIS II               LAST CHANGED 21 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

     ..................................................
OUT OF SERVICE                                          WHOI

DEP: 20 DEC 86 SAN DIEGO CA       MAINTENANCE
ARR: 01 JAN 87 SAN DIEGO CA                                       13 DAY(S)
AREA INDEX: NP9
     ..................................................
OCEANOGRAPHIC RESEARCH          JUMARS/NOWELL/THISTL    NSF/ONR

DEP: 08 JAN 87 SAN DIEGO          UW/UW/FSU
ARR: 21 JAN 87 SAN DIEGO          SANTA CATALINA BASIN  14/3      14 DAY(S)
AREA INDEX: NP9
     ..................................................
TRANSIT                                                 NSF

DEP: 26 JAN 87 SAN DIEGO
ARR: 04 FEB 87 HONOLULU           TRANSIT                         10 DAY(S)
AREA INDEX: NP9   NP12
     ..................................................
OCEANOGRAPHIC RESEARCH          CRAIG/GARCIA            NSF

DEP: 08 FEB 87 HONOLULU           (SIO/UHI)
ARR: 24 FEB 87 HONOLULU           LOIHI VOLCANO                   17 DAY(S)
AREA INDEX: NP12
     ..................................................
OCEANOGRAPHIC RESEARCH          SMITH/LEVIN             NSF/ONR

DEP: 26 FEB 87 HONOLULU           (SIO/NCS)
ARR: 31 MAR 87 GUAM               HORIZON GUYOT & MAGELLAN RISE   34 DAY(S)
AREA INDEX: NP12  NP10  NP11
     ..................................................
OCEANOGRAPHIC RESEARCH          CRAIG (SIO)             NSF

DEP: 05 APR 87 GUAM
ARR: 18 APR 87 GUAM               MARIANA TROUGH                  14 DAY(S)
AREA INDEX: NP10
     ..................................................
OCEANOGRAPHIC RESEARCH          LONSDALE/HESSLER        NSF

DEP: 22 APR 87 GUAM               (SIO/SIO)
ARR: 12 MAY 87 GUAM               MARIANA TROUGH                  21 DAY(S)
AREA INDEX: NP10
     ..................................................
OCEANOGRAPHIC RESEARCH          FRYER (UHI)             NSF

DEP: 16 MAY 87 GUAM
ARR: 27 MAY 87 GUAM               MARIANA ARC                     12 DAY(S)
AREA INDEX: NP10
     ..................................................
OCEANOGRAPHIC RESEARCH          HUSSONG (UHI)           NSF

DEP: 31 MAY 87 GUAM
ARR: 17 JUN 87 GUAM               MARIANA-FORE-ARC                18 DAY(S)
AREA INDEX: NP10
     ..................................................
OCEANOGRAPHIC RESEARCH          LEINEN (URI)            NSF

DEP: 21 JUN 87 GUAM
ARR: 10 JUL 87 GUAM               MARIANA TROUGH                  20 DAY(S)
AREA INDEX: NP10
     ..................................................
OCEANOGRAPHIC RESEARCH          TAYLOR (UHI/NOAA)       NSF
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DEP: 14 JUL 87 GUAM
ARR: 09 AUG 87 YOKOHAMA    BONIN ISLAND ARC          27 DAY(S)
AREA INDEX: NP10  NP7
     ................................
TRANSIT                                     NSF

DEP: 17 AUG 87 YOKOHAMA
ARR: 03 SEP 87 SEATTLE     TRANSIT                   18 DAY(S)
AREA INDEX: NP7   NP9   NP8
     ................................
OCEANOGRAPHIC RESEARCH    KULM (OSU)        NSF

DEP: 07 SEP 87 SEATTLE
ARR: 07 OCT 87 SAN FRANCISCO    CENTRAL OREGON MARGIN     31 DAY(S)
AREA INDEX: NP9
     ................................
OCEANOGRAPHIC RESEARCH    CARNEY (LSU)      NSF

DEP: 12 OCT 87 SAN FRANCISCO
ARR: 23 OCT 87 SAN DIEGO   CENTRAL CALIFORNIA COAST  12 DAY(S)
AREA INDEX: NP9
     ................................
OCEANOGRAPHIC RESEARCH    JUMARS/NOWELL/THISTL   NSF/ONR

DEP: 27 OCT 87 SAN DIEGO   UWA/UWA/FSU
ARR: 08 NOV 87 SAN DIEGO   SANTA CATALINA BASIN13/3  13 DAY(S)
AREA INDEX: NP9
     ................................
OCEANOGRAPHIC RESEARCH    HAMMOND (UCLA)    NSF

DEP: 12 NOV 87 SAN DIEGO
ARR: 19 NOV 87 SAN DIEGO   SAN NICOLAS BASIN          8 DAY(S)
AREA INDEX: NP9
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    POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC:                          MR D A MOLLER
POC OFFICE:                   MANAGER
POC ORGANIZATION:             MARINE OPERATIONS
POC ADDRESS:                  WOODS HOLE OCEANOGRAPHIC INST.
POC CITY/STATE:               WOODS HOLE MA 02543
COMMERCIAL AREA CODE:         617
PHONE:                        548-1400

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          ADMINISTRATIVE DETAILS

DESIGNATOR:                        AGOR 15
CLASS:                             MELVILLE/AGOR 14
CALL SIGN (INTERNATIONAL):         KCEJ
FLEET:                             UNOLS
SHIP TYPE:                         OCEAN RESEARCH-GENERAL
SHIP OWNER:                        USN
CERTIFICATION AUTHORITY:           US COAST GUARD
FLAG REGISTRY:                     USA
HOME PORT:                         WOODS HOLE MA
TECHNICAL SPONSOR:                 WOODS HOLE OCEANOGRAPHIC INST.
OPERATIONS CONTROL:                WOODS HOLE OCEANOGRAPHIC INST.
CONTRACTUAL INFORMATION:           ONR CODE 611 LEASE TO EXPIRE 04 AUG 91
OPERATING COST/DAY:                12.8/87                     THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT:              24
NUMBER OFFICERS:                    0
NUMBER IN CREW:                      25
MAX SEA STATE:                     -  BEAUFORT SCALE
ENDURANCE:                          35 DAY(S)
LIMITING FACTOR:                   -
BUILDER:                           DEFOE SHIPBUILDING COMPANY
WHERE BUILT:                       BAY CITY MI USA
INITIAL COST:                      -
DUE DATE:                          '00
KEEL DATE:                         09 AUG 67
LAUNCH DATE:                       21 AUG 68
DELIVERY DATE:                     '70
COMMISSION DATE:                   14 JAN 70
CONVERSION DATE:                   '00
LAST OVERHAUL:                     24 DEC 86
MAINTENANCE CYCLE:                 1.5 YEARS
END OF LIFE:                       2000
UPDATE OF INFORMATION:             07 JAN 87

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        SHIP DIMENSIONS

LENGTH:                  244.8 FEET
MAX BEAM:                46.0 FEET
HEIGHT:                  -     FEET
GROSS TONNAGE:            1806
DISPLACEMENT:             1915 TONS
DRAUGHT:                 16.0 FEET
CRUISE SPEED:            11.0 KNOTS
RANGE:                   10000 NAUTICAL MILES
MAX SPEED:               11.5 KNOTS
MIN SPEED:                0.1 KNOTS

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ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                        DIESEL GEARED
AUXILIARY PROPULSION:                   CYCLOIDAL PROP FWD
NUMBER OF SHAFTS:                       2
BOW THRUSTER:                           YES
ACTIVE RUDDER:                          N
DYNAMIC POSITIONING:                    N
ANTI-ROLL:                              N
STABILIZER:                             N
DEEP ANCHOR:                            NONE  FEET
BERTHING VAN DIMENSIONS:                NO
INSTRUMENT VAN DIMENSIONS:              YES
WET-LAB:                                Y
DRY-LAB:                                Y
AMMUNITION STORAGE:                     N
HELO SUPPORT:                           N
METEOROLOGICAL OBSERVATIONS:            -
UTILITY BOATS:
    1. 16 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:                         POUNDS
  NUMBER OF FRAMES:                     0
CRANES OR BOOMS
  MAX HOIST CAPACITY:                   70000 POUNDS
  NUMBER OF CRANES:                     2
WINCHES:
    01. MAJOR TYPE/USE:                 HYDROGRAPHIC
        SECONDARY TYPE/USE:
        SLIP-RINGS:
        WIRE TYPE:                      WIRE ROPE
        WIRE LENGTH:                    30000 FEET
        WIRE DIAMETER:                  0.187 INCHES
    02. MAJOR TYPE/USE:                 HYDROGRAPHIC
        SECONDARY TYPE/USE:
        SLIP-RINGS:                     Y
        WIRE TYPE:                      CONDUCTOR CABLE
        WIRE LENGTH:                    33000 FEET
        WIRE DIAMETER:                  0.322 INCHES
    03. MAJOR TYPE/USE:                 TRAWL
        SECONDARY TYPE/USE:
        SLIP-RINGS:
        WIRE TYPE:                      WIRE ROPE
        WIRE LENGTH:                    30000 FEET
        WIRE DIAMETER:                  0.500 INCHES
```

ELECTRONIC EQUIPMENT

```
COMPUTERS:                               N
FACSIMILE:                               Y
ELECTROMAGNETIC LOG:                     -
INERTIAL NAVIGATION:                     N
RADAR (SURFACE SCAN):                    Y
LORAN A:                                 N
LORAN C:                                 Y
OMEGA:                                   N
SATELLITE NAVIGATION:                    Y
RADIO TELETYPE COMMUNICATION:            -
SINGLE SIDE BAND:                        Y
VHF COMMUNICATIONS:                      Y
STABLE TABLE:                            N
NARROW BEAM:                             -
SEISMIC PROFILING:                       -
SIDE SCAN:                               -
SOUNDING SYSTEM (SHALLOW):               HYDRO PRODUCTS
SOUNDING SYSTEM (DEEP):                  RAYTHEON
```

FUEL DETAILS

```
FUEL CAPACITY:                      110000 GALLONS
FUEL TYPE:                                 DIESEL
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:              GAL/24-HRS
    DURING AVERAGE OPERATIONS:             GAL/24-HRS
    DURING INPORT OPERATIONS:            - GAL/24-HRS

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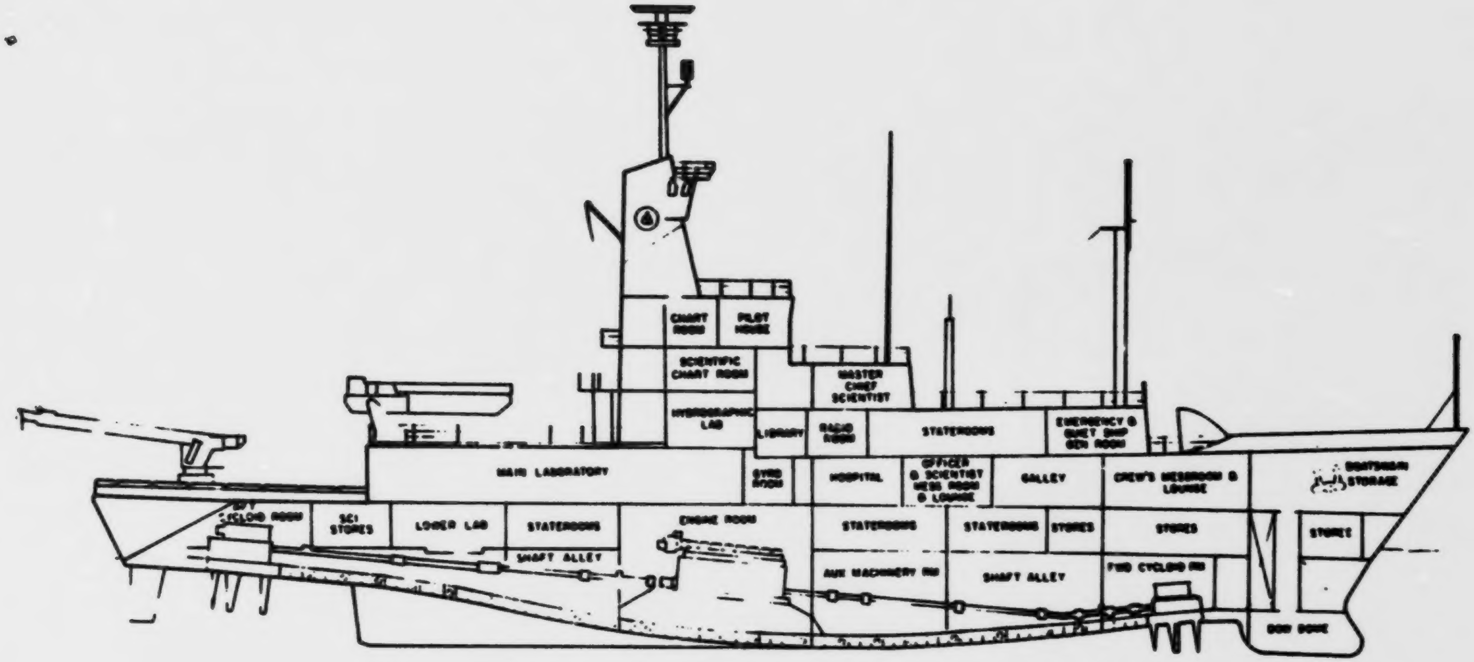
CHART ROOM
PILOT HOUSE
SCIENTIFIC CHART ROOM
HYDROGRAPHIC LAB
MASTER CHIEF SCIENTIST
LIBRARY
RADIO ROOM
STATEROOMS
EMERGENCY & QUIET SHIP GEN ROOM
MAIN LABORATORY
GYRO ROOM
HOSPITAL
OFFICER & SCIENTIST MESS ROOM & LOUNGE
GALLEY
CREW'S MESSROOM & LOUNGE
BOATSWAIN STORAGE
AFT CYCLOID ROOM
SCI STORES
LOWER LAB
STATEROOMS
ENGINE ROOM
STATEROOMS
STATEROOMS
STORES
STORES
STORES
SHAFT ALLEY
AUX MACHINERY RM
SHAFT ALLEY
FWD CYCLOID RM
BOW DOME

R/V KNORR

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                 KNORR                    LAST CHANGED 21 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ........................................
OUT OF SERVICE                                      WHOI

DEP: 01 JAN 87 WOODS HOLE
ARR: 29 JUN 87 WOODS HOLE                                     180 DAY(S)
AREA INDEX: NA6
      ........................................
OCEANOGRAPHIC RESEARCH          BALLARD             NSF/USN/USGS

DEP: 11 JUL 87 WOODS HOLE
ARR: 15 AUG 87 WOODS HOLE         W. NORTH ATLANTIC  8/26/2        36 DAY(S)
AREA INDEX: NA6
      ........................................
OCEANOGRAPHIC RESEARCH          HOGG                NSF/ONR

DEP: 21 AUG 87 WOODS HOLE
ARR: 09 SEP 87 WOODS HOLE         W. NORTH ATLANTIC  10/10         20 DAY(S)
AREA INDEX: NA6
      ........................................
OUT OF SERVICE                                      WHOI

DEP: 14 SEP 87 WOODS HOLE
ARR: 15 SEP 87 WOODS HOLE         INSURV                            2 DAY(S)
AREA INDEX: NA6
      ........................................
TRANSIT                                             NSF

DEP: 21 SEP 87 WOODS HOLE
ARR: 12 OCT 87 RIO DE JANEIRO     TRANSIT                          22 DAY(S)
AREA INDEX: NA6   SA1   NA9   NA10
      ........................................
OCEANOGRAPHIC RESEARCH          SMITHIE (LDGO)      NSF

DEP: 17 OCT 87 RIO DE JANEIRO
ARR: 08 NOV 87 ABIDJAN            SOUTH ATLANTIC                   23 DAY(S)
AREA INDEX: SA1   NA11

DEP: 13 NOV 87 ABIDJAN
ARR: 20 DEC 87 RIO DE JANEIRO     SOUTH ATLANTIC                   38 DAY(S)
AREA INDEX: NA11  SA1

DEP: 29 DEC 87 RIO DE JANEIRO
ARR: 31 DEC 87 RIO DE JANEIRO     SOUTH ATLANTIC                    3 DAY(S)
AREA INDEX: SA1
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                OCEANUS
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       POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC:                       MR D A MOLLER
POC OFFICE:                MARINE OPERATIONS COORDINATOR
POC ORGANIZATION:          MARINE OPERATIONS
POC ADDRESS:               WOODS HOLE OCEANOGRAPHIC INST.
POC CITY/STATE:            WOODS HOLE MA  02543
COMMERCIAL AREA CODE:      617
PHONE:                     548-1400

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              ADMINISTRATIVE DETAILS

DESIGNATOR:                     RV
CLASS:                          OCEANUS
CALL SIGN (INTERNATIONAL):      WYN4084
FLEET:                          UNOLS
SHIP TYPE:                      OCEAN RESEARCH-GENERAL
SHIP OWNER:                     NSF
CERTIFICATION AUTHORITY:        -
FLAG REGISTRY:                  USA
HOME PORT:                      WOODS HOLE MA
TECHNICAL SPONSOR:              WOODS HOLE OCEANOGRAPHIC INST.
OPERATIONS CONTROL:             WOODS HOLE OCEANOGRAPHIC INST.
CONTRACTUAL INFORMATION:        NONE
OPERATING COST/DAY:             7.4/87                    THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT:           12
NUMBER OFFICERS:                 4
NUMBER IN CREW:                    8
MAX SEA STATE:                  -  BEAUFORT SCALE
ENDURANCE:                       25 DAY(S)
LIMITING FACTOR:                -
BUILDER:                        PETERSON BUILDERS INC
WHERE BUILT:                    STURGEON BAY WI USA
INITIAL COST:                   3.5/75   MILLION $'S IN YEAR
DUE DATE:                       '00
KEEL DATE:                      '00
LAUNCH DATE:                    19 DEC 74
DELIVERY DATE:                  21 NOV 75
COMMISSION DATE:                '00
CONVERSION DATE:                '00
LAST OVERHAUL:                  21 OCT 85
MAINTENANCE CYCLE:              1.5 YEARS
END OF LIFE:                    2000
UPDATE OF INFORMATION:          07 JAN 87

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         SHIP DIMENSIONS

LENGTH:                 177.0 FEET
MAX BEAM:               33.0 FEET
HEIGHT:                  86.0 FEET
GROSS TONNAGE:             297
DISPLACEMENT:              960 TONS
DRAUGHT:                17.5 FEET
CRUISE SPEED:           12.5 KNOTS
RANGE:                   7500 NAUTICAL MILES
MAX SPEED:              15.0 KNOTS
MIN SPEED:               1.0 KNOTS

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ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION: DIESEL GEARED
AUXILIARY PROPULSION: NO
NUMBER OF SHAFTS: 1
BOW THRUSTER: TRAINABLE
ACTIVE RUDDER: N
DYNAMIC POSITIONING: N
ANTI-ROLL: N
STABILIZER: N
DEEP ANCHOR: - FEET
BERTHING VAN DIMENSIONS: -
INSTRUMENT VAN DIMENSIONS: 8X8X13
WET-LAB: Y
DRY-LAB: Y
AMMUNITION STORAGE: N
HELO SUPPORT: N
METEOROLOGICAL OBSERVATIONS: -
UTILITY BOATS:
1. 15 FOOT RUBBER INFLATABLE
2. 12 FOOT SKIFF

A, U, OR L FRAMES
MAX HOIST CAPACITY: 30000 POUNDS
NUMBER OF FRAMES: 1

CRANES OR BOOMS
MAX HOIST CAPACITY: 30000 POUNDS
NUMBER OF CRANES: 1

WINCHES:

01. MAJOR TYPE/USE: TRAWL
SECONDARY TYPE/USE: CORING
SLIP-RINGS: Y
WIRE TYPE: WIRE ROPE
WIRE LENGTH: 30000 FEET
WIRE DIAMETER: 0.500 INCHES

02. MAJOR TYPE/USE: HYDROGRAPHIC
SECONDARY TYPE/USE: UTILITY
SLIP-RINGS: Y
WIRE TYPE: WIRE ROPE
WIRE LENGTH: 30000 FEET
WIRE DIAMETER: 0.187 INCHES
SECONDARY WIRE TYPE: CONDUCTOR CABLE
SECONDARY WIRE LEN: 25000 FEET
SECONDARY WIRE DIAM: 0.303 INCHES

ELECTRONIC EQUIPMENT

COMPUTERS: N
FACSIMILE: Y
ELECTROMAGNETIC LOG: Y
INERTIAL NAVIGATION: N
RADAR (SURFACE SCAN): Y
LORAN A: N
LORAN C: Y
OMEGA: N
SATELLITE NAVIGATION: Y
RADIO TELETYPE COMMUNICATION: N
SINGLE SIDE BAND: Y
VHF COMMUNICATIONS: Y
STABLE TABLE: N
NARROW BEAM: N
SEISMIC PROFILING: N
SIDE SCAN: N
SOUNDING SYSTEM (SHALLOW): ROSS
SOUNDING SYSTEM (DEEP): EDO RAYTHEON

FUEL DETAILS

FUEL CAPACITY: 56000 GALLONS

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FUEL TYPE:                                DIESEL #2
FUEL CONSUMPTION RATES:
     AT NORMAL CRUISING SPEED:            GAL/24-HRS
     DURING AVERAGE OPERATIONS:           GAL/24-HRS
     DURING INPORT OPERATIONS:          - GAL/24-HRS

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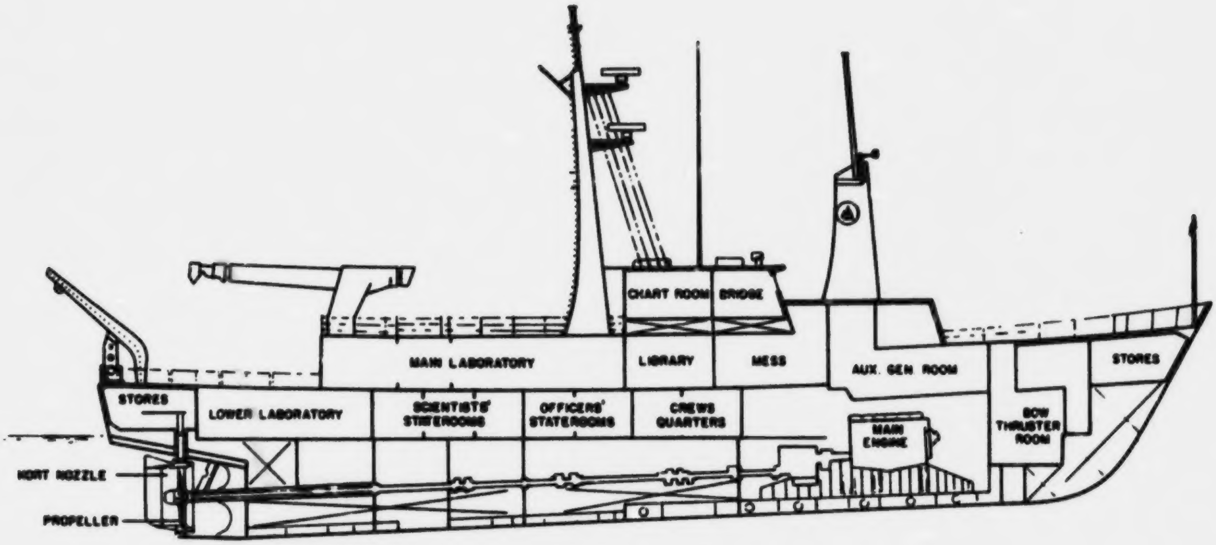
CHART ROOM
BRIDGE
MAIN LABORATORY
LIBRARY
MESS
AUX. GEN ROOM
STORES
STORES
LOWER LABORATORY
SCIENTISTS' STATEROOMS
OFFICERS' STATEROOMS
CREWS QUARTERS
MAIN ENGINE
BOW THRUSTER ROOM
KORT NOZZLE
PROPELLER

R/V OCEANUS

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                 OCEANUS                   LAST CHANGED 16 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      .........................................
OCEANOGRAPHIC RESEARCH           PURDY                   NSF

DEP: 01 JAN 87 WOODS HOLE
ARR: 31 JAN 87 WOODS HOLE          MID-ATLANTIC RIDGE               31 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           IRISH (UNH)             NSF

DEP: 06 FEB 87 WOODS HOLE
ARR: 15 FEB 87 PORTSMOUTH, NH      GULF OF MAINE                    10 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           CAMMEN (BLOS)           NSF

DEP: 17 FEB 87 PORTSMOUTH, NH
ARR: 20 FEB 87 WOODS HOLE          GULF OF MAINE                     4 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           MARRA (LDGO)            ONR

DEP: 26 FEB 87 WOODS HOLE          BIOWATT PROGRAM
ARR: 10 MAR 87 WOODS HOLE          W. NO. ATLANTIC                  13 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           WILSON (SIO)            NSF

DEP: 14 MAR 87 WOODS HOLE          BIOLOGY
ARR: 18 MAR 87 WOODS HOLE          W. NO. ATLANTIC                   5 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           HARBISON                NSF

DEP: 21 MAR 87 WOODS HOLE          BIOLOGY
ARR: 10 APR 87 WOODS HOLE          W. NO. ATLANTIC                  21 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           PRICE                   NSF

DEP: 17 APR 87 WOODS HOLE
ARR: 30 APR 87 WOODS HOLE          NO. ATLANTIC                     14 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           MARRA (LDGO)            ONR

DEP: 11 MAY 87 WOODS HOLE          BIOWATT  PROGRAM
ARR: 24 MAY 87 WOODS HOLE          W. NO. ATLANTIC                  14 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           BERTEAUX/BRADLEY        ONR/NSF

DEP: 01 JUN 87 WOODS HOLE
ARR: 07 JUN 87 WOODS HOLE          W. NO. ATLANTIC 2/5               7 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           OLSON                   NSF

DEP: 10 JUN 87 WOODS HOLE          BIOLOGY
ARR: 23 JUN 87 WOODS HOLE          W. NO. ATLANTIC                  14 DAY(S)
AREA INDEX: NA6
      .........................................
OCEANOGRAPHIC RESEARCH           STOECKER                NSF
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DEP: 29 JUN 87 WOODS HOLE          BIOLOGY
ARR: 08 JUL 87 WOODS HOLE          W. NO. ATLANTIC                      10 DAY(S)
AREA INDEX: NA6
        ......................................................
OCEANOGRAPHIC RESEARCH           HARBISON                NSF

DEP: 13 JUL 87 WOODS HOLE
ARR: 29 JUL 87 CHARLESTON          W. NO. ATLANTIC                      17 DAY(S)
AREA INDEX: NA6

DEP: 01 AUG 87 CHARLESTON
ARR: 16 AUG 87 WOODS HOLE          W. NORTH ATLANTIC                    16 DAY(S)
AREA INDEX: NA6
        ......................................................
OCEANOGRAPHIC RESEARCH           MARRA (LDGO)            ONR

DEP: 21 AUG 87 WOODS HOLE          BIOWATT PROGRAM
ARR: 03 SEP 87 WOODS HOLE          W. NO. ATLANTIC                      14 DAY(S)
AREA INDEX: NA6
        ......................................................
OCEANOGRAPHIC RESEARCH           OWENS                   ONR

DEP: 14 SEP 87 WOODS HOLE          PHYSICAL
ARR: 30 SEP 87 BERMUDA             NORTH ATLANTIC                       17 DAY(S)
AREA INDEX: NA6
        ......................................................
OCEANOGRAPHIC RESEARCH           BERTEAUX                ONR

DEP: 02 OCT 87 WOODS HOLE
ARR: 05 OCT 87 WOODS HOLE          W. NO. ATLANTIC                       4 DAY(S)
AREA INDEX: NA6
        ......................................................
OUT OF SERVICE

DEP: 06 OCT 87 WOODS HOLE
ARR: 11 NOV 87 WOODS HOLE          SHIPYARD                             37 DAY(S)
AREA INDEX: NA6
        ......................................................
OCEANOGRAPHIC RESEARCH           WIEBE                   NSF

DEP: 12 NOV 87 WOODS HOLE
ARR: 16 NOV 87 WOODS HOLE          W. NORTH ATLANTIC                     5 DAY(S)
AREA INDEX: NA6
        ......................................................
OCEANOGRAPHIC RESEARCH           MARRA (LDGO)            ONR

DEP: 21 NOV 87 WOODS HOLE
ARR: 03 DEC 87 WOODS HOLE          W. NO. ATLANTIC                      13 DAY(S)
AREA INDEX: NA6
        ......................................................
OCEANOGRAPHIC RESEARCH           PURDY                   NSF

DEP: 09 DEC 87 WOODS HOLE
ARR: 11 DEC 87 WOODS HOLE          TEST EQUIPMENT                        3 DAY(S)
AREA INDEX: NA6
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                LAURENTIAN
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      POINT OF CONTACT INFORMATION (CHARACTERISTICS)

  POC:                        MR. R G WETZEL
  POC OFFICE:                 GREAT LAKES RES. DIVISION
  POC ORGANIZATION:           UNIV OF MICHIGAN
  POC ADDRESS:                2200 BONISTEEL BLVD
  POC CITY/STATE:             ANN ARBOR MI 48109
  COMMERCIAL AREA CODE:       313
  PHONE:                      764 2420

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            ADMINISTRATIVE DETAILS

  DESIGNATOR:                      -
  CLASS:                           TRAWLER
  CALL SIGN (INTERNATIONAL):       -
  FLEET:                           UNOLS
  SHIP TYPE:                       COASTAL ZONE RESEARCH-GENERAL
  SHIP OWNER:                      REGENTS, UNIV. OF MICHIGAN
  CERTIFICATION AUTHORITY:         -
  FLAG REGISTRY:                   USA
  HOME PORT:                       GRAND HAVEN MICHIGAN
  TECHNICAL SPONSOR:               -
  OPERATIONS CONTROL:              GR LAKES RES. DIVISION
  CONTRACTUAL INFORMATION:         -
  OPERATING COST/DAY:              2.77/86                           THOUSAND $'S IN YR
  SCIENTIFIC COMPLEMENT:             8
  NUMBER OFFICERS:                  2
  NUMBER IN CREW:                     4
  MAX SEA STATE:                    4 BEAUFORT SCALE
  ENDURANCE:                        10 DAY(S)
  LIMITING FACTOR:                 STORES
  BUILDER:                         F B WALKER & SONS INC.
  WHERE BUILT:                     PASCAGOULA MS USA
  INITIAL COST:                    -
  DUE DATE:                        '00
  KEEL DATE:                       '00
  LAUNCH DATE:                     00 APR 74
  DELIVERY DATE:                   00 JUN 74
  COMMISSION DATE:                 '00
  CONVERSION DATE:                 '00
  LAST OVERHAUL:                   00 APR 83
  MAINTENANCE CYCLE:               1.5 YEARS
  END OF LIFE:                     1998
  UPDATE OF INFORMATION:           07 JAN 87

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        SHIP DIMENSIONS

  LENGTH:              80.0 FEET
  MAX BEAM:           21.5 FEET
  HEIGHT:              40.0 FEET
  GROSS TONNAGE:        129
  DISPLACEMENT:         180 TONS
  DRAUGHT:             8.8 FEET
  CRUISE SPEED:        8.5 KNOTS
  RANGE:               5000 NAUTICAL MILES
  MAX SPEED:           9.6 KNOTS
  MIN SPEED:           0.5 KNOTS

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ENGINEERING/DECK EQUIPMENT

```
MAIN PROPULSION:                    DIESEL GEARED
AUXILIARY PROPULSION:               N
NUMBER OF SHAFTS:                   1
BOW THRUSTER:                       N
ACTIVE RUDDER:                      N
DYNAMIC POSITIONING:                N
ANTI-ROLL:                          N
STABILIZER:                         N
DEEP ANCHOR:                        NONE  FEET
BERTHING VAN DIMENSIONS:            N
INSTRUMENT VAN DIMENSIONS:          N
WET-LAB:                            Y
DRY-LAB:                            Y
AMMUNITION STORAGE:                 N
HELO SUPPORT:                       N
METEOROLOGICAL OBSERVATIONS:        Y
UTILITY BOATS:
    1. 13 FOOT BOSTON WHALER
A, U, OR L FRAMES
  MAX HOIST CAPACITY:                2000 POUNDS
  NUMBER OF FRAMES:                 1
CRANES OR BOOMS
  MAX HOIST CAPACITY:                7000 POUNDS
  NUMBER OF CRANES.                 1
WINCHES:
    01. MAJOR TYPE/USE:             TRAWL
        SECONDARY TYPE/USE:         CORING
        SLIP-RINGS:                 N
        WIRE TYPE:                  WIRE ROPE
        WIRE LENGTH:                03000 FEET
        WIRE DIAMETER:              0.500 INCHES
    02. MAJOR TYPE/USE:             TRAWL
        SECONDARY TYPE/USE:         ANCHOR
        SLIP-RINGS:                 N
        WIRE TYPE:                  WIRE ROPE
        WIRE LENGTH:                01500 FEET
        WIRE DIAMETER:              0.375 INCHES
    03. MAJOR TYPE/USE:             BATHYTHERMOGRAPHIC
        SECONDARY TYPE/USE:         OTHER
        SLIP-RINGS:                 N
        WIRE TYPE:                  WIRE ROPE
        WIRE LENGTH:                01200 FEET
        WIRE DIAMETER:              0.375 INCHES
    04. MAJOR TYPE/USE:             UTILITY
        SECONDARY TYPE/USE:         UTILITY
        SLIP-RINGS:                 Y
        WIRE TYPE:                  WIRE ROPE
        WIRE LENGTH:                      FEET
        WIRE DIAMETER:              0     INCHES

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ELECTRONIC EQUIPMENT

```
COMPUTERS:                          NONE
FACSIMILE:                          Y
ELECTROMAGNETIC LOG:                N
INERTIAL NAVIGATION:                N
RADAR (SURFACE SCAN):               Y
LORAN A:                            N
LORAN C:                            Y
OMEGA:                              N
SATELLITE NAVIGATION:               Y
RADIO TELETYPE COMMUNICATION:       N
SINGLE SIDE BAND:                   Y
VHF COMMUNICATIONS:                 Y
STABLE TABLE:                       N
NARROW BEAM:                        N
SEISMIC PROFILING:                  N
SIDE SCAN:                          N
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SOUNDING SYSTEM (SHALLOW):      ROSS 200A
SOUNDING SYSTEM (DEEP):         NONE

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      FUEL DETAILS

FUEL CAPACITY:                    9500 GALLONS
FUEL TYPE:                             DIESEL #2
FUEL CONSUMPTION RATES:
    AT NORMAL CRUISING SPEED:      425 GAL/24-HRS
    DURING AVERAGE OPERATIONS:     300 GAL/24-HRS
    DURING INPORT OPERATIONS:       95 GAL/24-HRS

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                 LAURENTIAN               LAST CHANGED 21 JAN 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87
            ...........................................
OUT OF SERVICE                    NAUTA                  U MICHIGAN

DEP: 01 JAN 87 GRAND HAVEN
ARR: 12 APR 87 GRAND HAVEN          GREAT LAKES                 102 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            MOLL                   NSF

DEP: 13 APR 87 GRAND HAVEN
ARR: 16 APR 87 GRAND HAVEN          GREAT LAKES                   4 DAY(S)
AREA INDEX: NA6

DEP: 27 APR 87 GRAND HAVEN
ARR: 30 APR 87 GRAND HAVEN          GREAT LAKES                   4 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            SCHELSKE               NSF

DEP: 04 MAY 87 GRAND HAVEN
ARR: 23 MAY 87 GRAND HAVEN          GREAT LAKES                  20 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            MOLL                   NSF

DEP: 25 MAY 87 GRAND HAVEN
ARR: 29 MAY 87 GRAND HAVEN          GREAT LAKES                   5 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            GOAD                   NSF

DEP: 01 JUN 87 GRAND HAVEN
ARR: 04 JUN 87 GRAND HAVEN          GREAT LAKES                   4 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            MOLL                   NSF

DEP: 06 JUN 87 GRAND HAVEN
ARR: 09 JUN 87 GRAND HAVEN          GREAT LAKES                   4 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            KERFOOT                NSF

DEP: 11 JUN 87 GRAND HAVEN
ARR: 20 JUN 87 GRAND HAVEN          GREAT LAKES                  10 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            MOLL                   NSF

DEP: 22 JUN 87 GRAND HAVEN
ARR: 25 JUN 87 GRAND HAVEN          GREAT LAKES                   4 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            GOAD                   NSF

DEP: 06 JUL 87 GRAND HAVEN
ARR: 09 JUL 87 GRAND HAVEN          GREAT LAKES                   4 DAY(S)
AREA INDEX: NA6
            ...........................................
OCEANOGRAPHIC RESEARCH            LEHMAN                 NSF

DEP: 11 JUL 87 GRAND HAVEN
ARR: 17 JUL 87 GRAND HAVEN          GREAT LAKES                   7 DAY(S)
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AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           LEHMAN                   NOAA

DEP: 18 JUL 87 GRAND HAVEN
ARR: 24 JUL 87 GRAND HAVEN         GREAT LAKES                             7 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           GOAD                     NSF

DEP: 27 JUL 87 GRAND HAVEN
ARR: 30 JUL 87 GRAND HAVEN         GREAT LAKES                             4 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           ROSSMAN                  NOAA

DEP: 02 AUG 87 GRAND HAVEN
ARR: 08 AUG 87 GRAND HAVEN         GREAT LAKES                             7 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           LEHMAN                   NSF

DEP: 10 AUG 87 GRAND HAVEN
ARR: 16 AUG 87 GRAND HAVEN         GREAT LAKES                             7 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           LEHMAN                   NOAA

DEP: 17 AUG 87 GRAND HAVEN
ARR: 24 AUG 87 GRAND HAVEN         GREAT LAKES                             8 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           GOAD                     NSF

DEP: 25 AUG 87 GRAND HAVEN
ARR: 28 AUG 87 GRAND HAVEN         GREAT LAKES                             4 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           ROSSMAN                  NOAA

DEP: 02 SEP 87 GRAND HAVEN
ARR: 08 SEP 87 GRAND HAVEN         GREAT LAKES                             7 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           KERFOOT                  NSF

DEP: 10 SEP 87 GRAND HAVEN
ARR: 21 SEP 87 GRAND HAVEN         GRAND LAKES                            12 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           LEHMAN                   NSF/NOAA

DEP: 23 SEP 87 GRAND HAVEN
ARR: 04 OCT 87 GRAND HAVEN         GREAT LAKES                            12 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           GOAD                     NSF

DEP: 06 OCT 87 GRAND HAVEN
ARR: 10 OCT 87 GRAND HAVEN         GREAT LAKES                             5 DAY(S)
AREA INDEX: NA6
           ..........................................
OCEANOGRAPHIC RESEARCH           BOWERS                   NSF

DEP: 12 OCT 87 GRAND HAVEN
ARR: 26 OCT 87 GRAND HAVEN         GREAT LAKES                            15 DAY(S)
AREA INDEX: NA6
           ..........................................
OUT OF SERVICE                   NAUTA

DEP: 27 OCT 87 GRAND HAVEN
ARR: 31 DEC 87 GRAND HAVEN         GREAT LAKES                            66 DAY(S)
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           LINWOOD HOLTON
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    POINT OF CONTACT INFORMATION (CHARACTERISTICS)

POC:                       ROBERT N BRAY
POC OFFICE:                SENIOR CAPTAIN
POC ORGANIZATION:          DEPT OF OCEANOGRAPHY, O.D.U.
POC ADDRESS:               HAMPTON BLVD.
POC CITY/STATE:            NORFOLK VA  23508
COMMERCIAL AREA CODE:      804
PHONE:                     440-4285

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          ADMINISTRATIVE DETAILS

COMMON SHIP NAME:               HOLTON
DESIGNATOR:                     RV
CLASS:                          ARMY 'T' BOAT
CALL SIGN (INTERNATIONAL):      WZN9847
FLEET:                          UNIV
SHIP TYPE:                      COASTAL-BAY SURVEY-GENERAL
SHIP OWNER:                     OLD DOMINION UNIVERSITY
CERTIFICATION AUTHORITY:        N/A
FLAG REGISTRY:                  USA
HOME PORT:                      NORFOLK VA
TECHNICAL SPONSOR:              DEPT OF OCEANOGRAPHY, O.D.U.
OPERATIONS CONTROL:             DEPT OF OCEANOGRAPHY, O.D.U.
CONTRACTUAL INFORMATION:        CALL POC FOR AVAILABILITY.
OPERATING COST/DAY:             1.0/83                       THOUSAND $'S IN YR
SCIENTIFIC COMPLEMENT:           20
NUMBER OFFICERS:                 1
NUMBER IN CREW:                    1
MAX SEA STATE:                   6 BEAUFORT SCALE
ENDURANCE:                        3 DAY(S)
LIMITING FACTOR:                FUEL
BUILDER:                        HIGGINS
WHERE BUILT:                    NEW ORLEANS LA USA
INITIAL COST:                   -
DUE DATE:                       -
KEEL DATE:                      -
LAUNCH DATE:                    -
DELIVERY DATE:                  -
COMMISSION DATE:                '53
CONVERSION DATE:                '70
LAST OVERHAUL:                  28 FEB 81
MAINTENANCE CYCLE:              2.0 YEARS
END OF LIFE:                    1990
UPDATE OF INFORMATION:          03 JUN 83

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         SHIP DIMENSIONS

LENGTH:              65.0 FEET
MAX BEAM:           18.5 FEET
HEIGHT:             40.0 FEET
GROSS TONNAGE:      -
DISPLACEMENT:          95 TONS
DRAUGHT:             7.0 FEET
CRUISE SPEED:       10.0 KNOTS
RANGE:                850 NAUTICAL MILES
MAX SPEED:          11.5 KNOTS
MIN SPEED:           3.5 KNOTS

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     ENGINEERING/DECK EQUIPMENT

MAIN PROPULSION:              DIESEL ELECTRIC
AUXILIARY PROPULSION:         NONE
NUMBER OF SHAFTS:             1
BOW THRUSTER:                 N
ACTIVE RUDDER:                Y
DYNAMIC POSITIONING:          N
ANTI-ROLL:                    N
STABILIZER:                   N
DEEP ANCHOR:                  N     FEET
BERTHING VAN DIMENSIONS:      NONE
INSTRUMENT VAN DIMENSIONS:    NONE
WET-LAB:                      Y
DRY-LAB:                      N
AMMUNITION STORAGE:           N
HELO SUPPORT:                 N
METEOROLOGICAL OBSERVATIONS:  SURFACE
UTILITY BOATS:
    1. 11 FOOT RUBBER INFLATABLE
A, U, OR L FRAMES
  MAX HOIST CAPACITY:               POUNDS
  NUMBER OF FRAMES:           0
CRANES OR BOOMS
  MAX HOIST CAPACITY:          1500 POUNDS
  NUMBER OF CRANES:           3
WINCHES:
    01. MAJOR TYPE/USE:       TRAWL
        SECONDARY TYPE/USE:   UTILITY
        SLIP-RINGS:           N
        WIRE TYPE:            WIRE ROPE
        WIRE LENGTH:           0300 FEET
        WIRE DIAMETER:        0.313 INCHES
        SECONDARY WIRE TYPE:  WIRE ROPE
        SECONDARY WIRE LEN:    0500 FEET
        SECONDARY WIRE DIAM:  0.188 INCHES
    02. MAJOR TYPE/USE:       HYDROGRAPHIC
        SECONDARY TYPE/USE:   UTILITY
        SLIP-RINGS:
        WIRE TYPE:            WIRE ROPE
        WIRE LENGTH:           0350 FEET
        WIRE DIAMETER:        0.188 INCHES
    03. MAJOR TYPE/USE:       HYDROGRAPHIC
        SECONDARY TYPE/USE:   UTILITY
        SLIP-RINGS:
        WIRE TYPE:            WIRE ROPE
        WIRE LENGTH:           0350 FEET
        WIRE DIAMETER:        0.188 INCHES

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     ELECTRONIC EQUIPMENT

COMPUTERS:                     NONE
FACSIMILE:                     N
ELECTROMAGNETIC LOG:           N
INERTIAL NAVIGATION:           N
RADAR (SURFACE SCAN):          Y
LORAN A:                       N
LORAN C:                       Y
OMEGA:                         N
SATELLITE NAVIGATION:          N
RADIO TELETYPE COMMUNICATION:  N
SINGLE SIDE BAND:              N
VHF COMMUNICATIONS:            Y
STABLE TABLE:                  N
NARROW BEAM:                   Y
SEISMIC PROFILING:             N
SIDE SCAN:                     N
SOUNDING SYSTEM (SHALLOW):     RAYTHEON
SOUNDING SYSTEM (DEEP):        NONE
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       FUEL DETAILS

  FUEL CAPACITY:                          1150 GALLONS
  FUEL TYPE:                                   DIESEL
  FUEL CONSUMPTION RATES:
      AT NORMAL CRUISING SPEED:            312 GAL/24-HRS
      DURING AVERAGE OPERATIONS:           250 GAL/24-HRS
      DURING INPORT OPERATIONS:              0 GAL/24-HRS

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                   LINWOOD HOLTON            LAST CHANGED 06 FEB 87

                  OPS SCHEDULE FOR PERIOD
                  01 JAN 87 THRU 31 DEC 87
 ...........................................
OCEANOGRAPHIC RESEARCH                                     ODU

DEP: 01 JAN 87 NORFOLK VA          NUMEROUS SHORT TRIPS IN CHESAPEAKE BAY
ARR: 31 DEC 87 NORFOLK VA          CONTACT POC FOR INFORMATION    365 DAY(S)
AREA INDEX: NA6
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    POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                    EDWIN LINK
    NAME:                         ROGER W COOK
    OFFICE:                       DIRECTOR, MARINE OPERATIONS
    ORGANIZATION:                 HARBOR BRANCH OCEANOGRAPHIC INST.
    ADDRESS:                      R R 1 BOX 196
    CITY-STATE:                   FORT PIERCE FL 33450
    FTS PREFIX:                   305
    COMMERCIAL AREA CODE:         305
    PHONE:                        465-2400


      SHIP DIMENSIONS

    LENGTH:              123.7 FEET
    MAX BEAM:             27.4 FEET
    DISPLACEMENT:          335 TONS
    DRAUGHT:              10.7 FEET
    CRUISE SPEED:         12.0 KNOTS
    RANGE:                2880 NAUTICAL MILES

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                  EDWIN LINK                 LAST CHANGED 22 JAN 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

      .............................................
OUT OF SERVICE                                           HBOI

DEP: 01 JAN 87 FORT PIERCE FL      MAINTENANCE
ARR: 01 APR 87 FORT PIERCE FL                                      91 DAY(S)
AREA INDEX: NP9
      .............................................
OCEANOGRAPHIC RESEARCH                                   HBOI

DEP: 01 APR 87 FORT PIERCE FL      MARINE OPERATIONS
ARR: 24 APR 87 FORT PIERCE FL                                      24 DAY(S)

DEP: 04 MAY 87 FORT PIERCE FL      HBOI PROJECTS
ARR: 18 MAY 87 FORT PIERCE FL                                      15 DAY(S)
AREA INDEX: NA9
      .............................................
OCEANOGRAPHIC RESEARCH                                   NOAA

DEP: 25 MAY 87 FORT PIERCE FL      NOAA PROJECTS
ARR: 13 JUL 87 FORT PIERCE FL                                      50 DAY(S)
AREA INDEX: NA9
      .............................................
OCEANOGRAPHIC RESEARCH                                   MMS

DEP: 03 AUG 87 FORT PIERCE FL      MMS PROJECTS
ARR: 17 AUG 87 FORT PIERCE FL                                      15 DAY(S)
AREA INDEX: NA9
      .............................................
OCEANOGRAPHIC RESEARCH                                   HBOI

DEP: 05 OCT 87 FORT PIERCE FL      HBOI PROJECTS
ARR: 17 OCT 87 FORT PIERCE FL                                      13 DAY(S)
AREA INDEX: NA9

DEP: 02 NOV 87 FORT PIERCE FL      HBOI PROJECTS
ARR: 19 NOV 87 FORT PIERCE FL                                      18 DAY(S)
AREA INDEX: NA9
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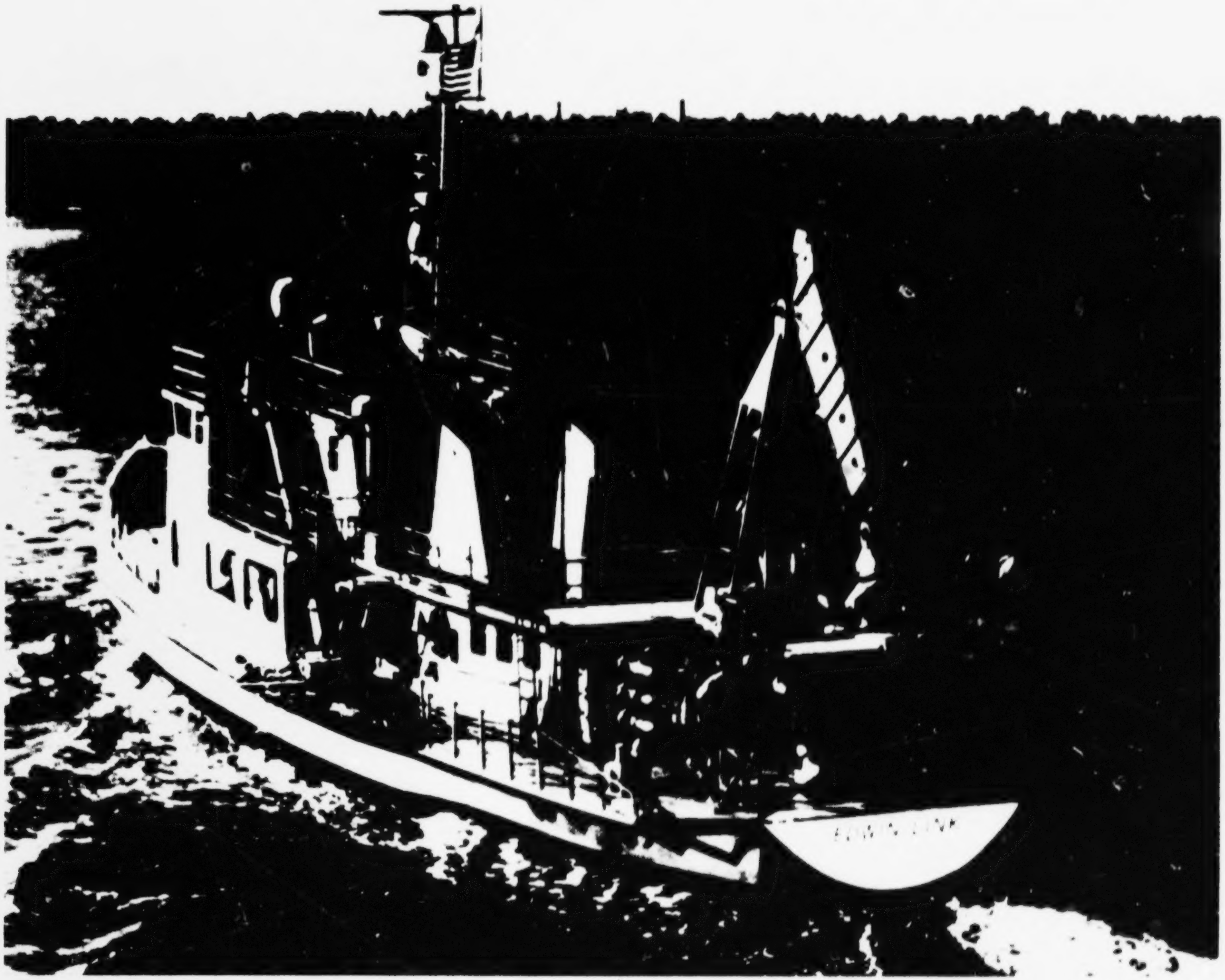

R/V EDWIN LINK

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                  SEA DIVER
   NAME:                       ROGER W COOK
   OFFICE:                     DIRECTOR, MARINE OPERATIONS
   ORGANIZATION:               HARBOR BRANCH OCEANOGRAPHIC INST.
   ADDRESS:                    R R 1 BOX 196
   CITY-STATE:                 FORT PIERCE FL 33450
   FTS PREFIX:                 305
   COMMERCIAL AREA CODE:       305
   PHONE:                      465-2400


     SHIP DIMENSIONS

   LENGTH:              98.6 FEET
   MAX BEAM:            23.1 FEET
   DISPLACEMENT:         234 TONS
   DRAUGHT:              9.1 FEET
   CRUISE SPEED:        10.0 KNOTS
   RANGE:               5000 NAUTICAL MILES

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                SEA DIVER                  LAST CHANGED 10 DEC 86

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

      ..........................................
OUT OF SERVICE                                        HBOI

DEP: 01 JAN 87 FORT PIERCE FL      MAINTENANCE
ARR: 13 MAR 87 FORT PIERCE FL                                  72 DAY(S)
AREA INDEX: NA9
      ..........................................
OCEANOGRAPHIC RESEARCH                                HBOI

DEP: 16 MAR 87 FORT PIERCE FL      HBOI MARINE OPERATIONS
ARR: 10 APR 87 FORT PIERCE FL                                  26 DAY(S)
AREA INDEX: NA9

DEP: 27 APR 87 FORT PIERCE FL      SEAPHARM
ARR: 13 JUN 87 FORT PIERCE FL                                  48 DAY(S)
AREA INDEX: NA9

DEP: 06 JUL 87 FORT PIERCE FL      SEAPHARM
ARR: 24 JUL 87 FORT PIERCE FL                                  19 DAY(S)
AREA INDEX: NA9

DEP: 03 AUG 87 FORT PIERCE FL      HBOI PROJECTS
ARR: 10 AUG 87 FORT PIERCE FL                                   8 DAY(S)
AREA INDEX: NA9

DEP: 05 OCT 87 FORT PIERCE FL      HBOI PROJECTS
ARR: 11 OCT 87 FORT PIERCE FL                                   7 DAY(S)
AREA INDEX. NA9
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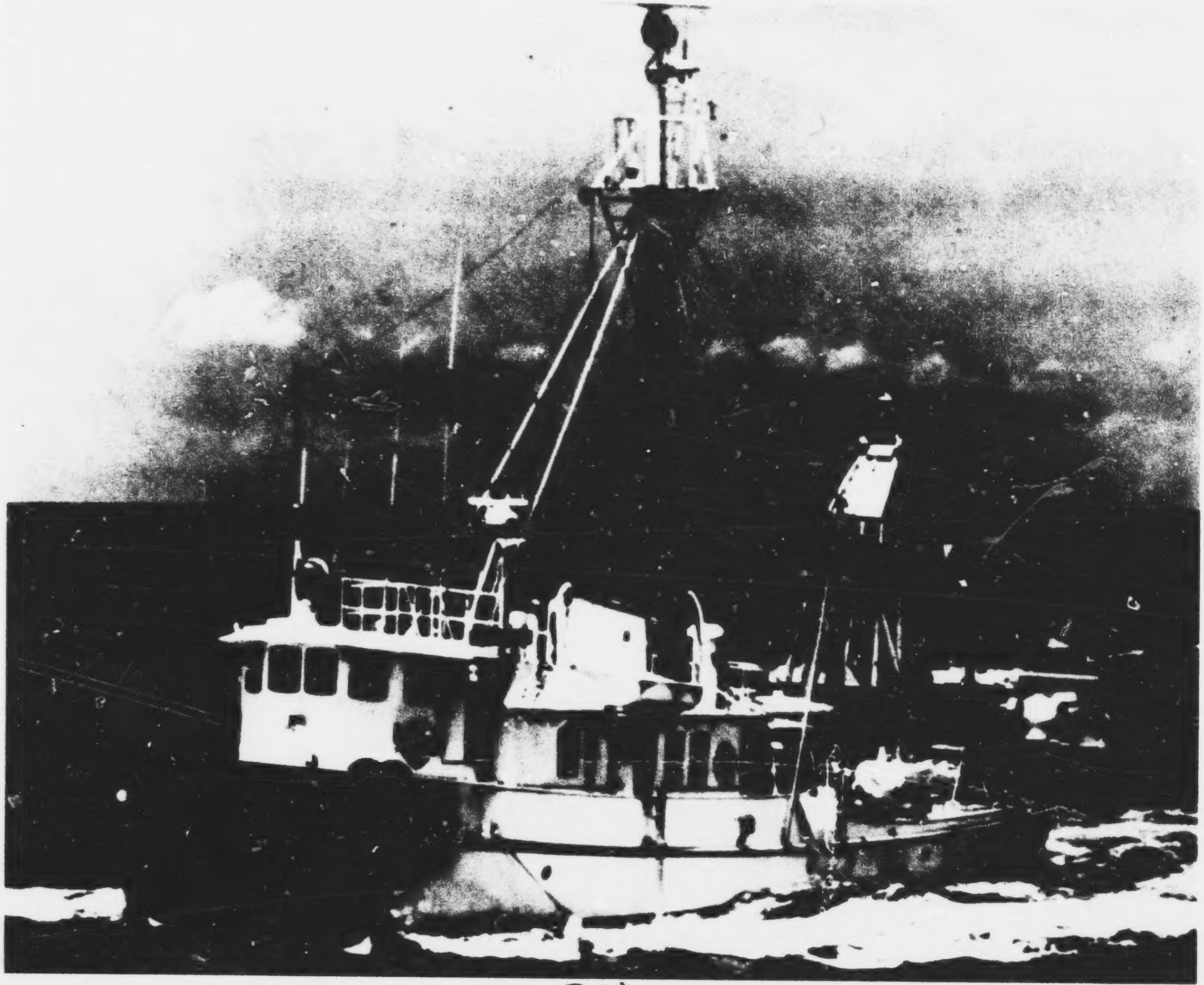

R/V SEA DIVER

200

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                SEWARD JOHNSON
    NAME:                     ROGER W COOK
    OFFICE:                   MARINE OPERATIONS/DIRECTOR
    ORGANIZATION:             HARBOR BRANCH OCEANOGRAPHIC INST.
    ADDRESS:                  RR#1, BOX 196
    CITY-STATE:               FT PIERCE FL 33450
    FTS PREFIX:               305
    COMMERCIAL AREA CODE:     305
    PHONE:                    465-2400


      SHIP DIMENSIONS

    LENGTH:            179.7 FEET
    MAX BEAM:           36.0 FEET
    DISPLACEMENT:        800 TONS
    DRAUGHT:            12.0 FEET
    CRUISE SPEED:       14.0 KNOTS
    RANGE:              8000 NAUTICAL MILES

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                 SEWARD JOHNSON            LAST CHANGED 23 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ........................................
OUT OF SERVICE                                          HBOI

DEP: 01 JAN 87 FORT PIERCE FL      MAINTENANCE
ARR: 01 APR 87 FORT PIERCE FL                                      91 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH                                  HBOI

DEP: 01 APR 87 FORT PIERCE FL      MARINE OPERATIONS
ARR: 24 APR 87 FORT PIERCE FL                                      24 DAY(S)
AREA INDEX: NA9

DEP: 04 MAY 87 FORT PIERCE FL      HBOI PROJECTS
ARR: 18 MAY 87 FORT PIERCE FL                                      15 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH                                  UCT-AP

DEP: 25 MAY 87 FORT PIERCE FL      UCT-AVERY POINT PROJECTS
ARR: 06 JUL 87 FORT PIERCE FL                                      43 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH                                  NSF

DEP: 20 JUL 87 FORT PIERCE FL      NSF PROJECTS
ARR: 31 JUL 87 FORT PIERCE FL                                      12 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH                                  HBOI

DEP: 31 JUL 87 FORT PIERCE FL      HBOI PROJECTS
ARR: 10 AUG 87 FORT PIERCE FL                                      11 DAY(S)
AREA INDEX: NA9
      ........................................
OCEANOGRAPHIC RESEARCH                                  NOAA

DEP: 24 AUG 87 FORT PIERCE FL      NOAA PROJECTS
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ARR: 14 SEP 87 FORT PIERCE FL                                    22 DAY(S)
AREA INDEX: NA9
          .........................................
OCEANOGRAPHIC RESEARCH                              HBOI

DEP: 28 SEP 87 FORT PIERCE FL      SEAPHARM
ARR: 20 NOV 87 FORT PIERCE FL                                    54 DAY(S)
AREA INDEX: NA9
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R/V SEWARD JOHNSON

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                  WESTWARD
   NAME:                       WALLACE C STARK
   OFFICE:                     MARINE SUPERINTENDENT
   ORGANIZATION:               SEA EDUCATION ASSOCIATION
   ADDRESS:                    P.O. BOX 6 (171 WOODS HOLE ROAD)
   CITY-STATE:                 WOODS HOLE MA  02543
   FTS PREFIX:                 617
   COMMERCIAL AREA CODE:       617
   PHONE:                      540-3954


     SHIP DIMENSIONS

   LENGTH:            125.0 FEET
   MAX BEAM:            -   FEET
   DISPLACEMENT:       250  TONS
   DRAUGHT:             -   FEET
   CRUISE SPEED:       7.0  KNOTS
   RANGE:               -   NAUTICAL MILES

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                  WESTWARD                  LAST CHANGED 26 NOV 86

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

            ........................................
OCEANOGRAPHIC RESEARCH                             SEA EDUCATION ASSOC.

DEP: 29 NOV 86 ST THOMAS VI         CARIBBEAN SEA
ARR: 09 JAN 87 MIAMI FL             SEA SEMESTER PROGRAM             42 DAY(S)
AREA INDEX: NA9
            ........................................
OCEANOGRAPHIC RESEARCH            FACULTY          SEA

DEP: 05 FEB 87 MIAMI FL             SEA SEMESTER PROGRAM
ARR: 18 MAR 87 ST PETERSBURG FL     BAHAMAS, CARIBBEAN               42 DAY(S)
AREA INDEX: NA9

DEP: 22 MAR 87 ST PETERSBURG FL     SEMINAR AT SEA
ARR: 31 MAR 87 MIAMI FL             CARIBBEAN                        10 DAY(S)
AREA INDEX: NA9

DEP: 06 APR 87 MIAMI FL             SEA SEMESTER PROGRAM
ARR: 15 MAY 87 WOODS HOLE MA        BAHAMAS, SARGASSO SEA            40 DAY(S)
AREA INDEX: NA9   NA6

DEP: 23 MAY 87 WOODS HOLE MA        SEA SEMESTER PROGRAM
ARR: 03 JUL 87 WOODS HOLE MA        GULF STREAM/SARGASSO SEA         42 DAY(S)
AREA INDEX: NA6

DEP: 18 JUL 87 WOODS HOLE MA        SEA SEMESTER PROGRAM
ARR: 28 AUG 87 GLOUCESTER MA        GULF OF MAINE/N. SCOTIAN SHELF   42 DAY(S)
AREA INDEX: NA6
            ........................................
OUT OF SERVICE                                     SEA

DEP: 28 AUG 87 GLOUCESTER MA        OPEN
ARR: 25 SEP 87 MYSTIC CT                                             29 DAY(S)
AREA INDEX: OPEN
            ........................................
OCEANOGRAPHIC RESEARCH            FACULTY          SEA

DEP: 25 SEP 87 MYSTIC CT            SEMINAR AT SEA
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ARR: 08 OCT 87 WOODS HOLE MA        GULF OF MAINE                     14 DAY(S)
AREA INDEX: NA6

DEP: 14 OCT 87 WOODS HOLE MA        SEA SEMESTER PROGRAM
ARR: 24 NOV 87 ST THOMAS USVI       SARGASSO SEA/E. CARIBBEAN         42 DAY(S)
AREA INDEX: NA6   NA9

DEP: 01 DEC 87 ST THOMAS USVI       SEA SEMESTER PROGRAM
ARR: 11 JAN 88 MIAMI FL             CARIBBEAN SEA                     42 DAY(S)
AREA INDEX: NA9
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OTHER UNIVERSITY OR INSTITUTIONAL VESSELS

(OVER 50 FT. LOA)

The following is a listing of other university research vessels registered with the University - National Oceanographic Laboratory System (UNOLS) Office and for which schedules have not been received or are not routinely prepared in advance. These vessels take regular cruises in local waters and, unless otherwise indicated, the nature of the work is general oceanography, coastal research and student training.

Most of these vessels are able to accommodate cooperative projects within the capability of the vessel either on a not-to-interfere or on a reimbursable basis. Further information should be obtained from the listed contact. Corrections and additions should be submitted to the UNOLS Office.

INSTITUTION	SHIP NAME	LOA (FT)	AREA OF OPERATION	CONTACT
Southern Maine Vocational Technical Institute Department of Marine Science and Technology Fort Road South Portland, ME 04106	AQUALAB III	146	New England Coast	Brian Hathaway (207)799-7303
Massachusetts Institute of Technology Sea Grant College Program 292 Main Street Bldg. E-28, Rm. 366 Cambridge, MA 02142	EDGERTON	65	New England Coast	Arthur Clifton (617)253-7136
Southern Massachusetts University North Dartmouth, MA 02747	CORSAIR	65	Cape Cod Waters	Jefferson Turner (617)999-8229
University of Connecticut Marine Science Institute SE Branch, Avery Point Groton, CN 06340	UCONN	65	Southern New England Coast Long Island Sound	Sung Feng (203)446-1020 Extension: 211

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INSTITUTION	SHIP NAME	LOA (FT)	AREA OF OPERATION	CONTACT
Cape Fear Technical Institute 411 North Front Street Wilmington, NC 28401	NORTH STAR	73	Atlantic Coast	Arthur W. Jordan (919)343-0481 Extension: 244
Florida Institute of Technology Melbourne, FL 32901	TURSIOPS DELPHINUS	65 63	Savannah Bight Florida, Bahamas	Jack Morton (305)768-8096 Extension: 302
Nova University Ocean Sciences Center 8000 North Ocean Drive Dania, FL 33004	ENDLESS SEAS	67	Florida Coastal Waters	Jan Witte (305)475-8330 Extension: 288
Florida Institute for Oceanography 830 First Street, S. St. Petersburg, FL 33701	BELLOWS SUNCOASTER	65 110	Florida Coast Gulf of Mexico Caribbean	William W. Behrens (813)893-9100 FTS: 826-2211
Marine Environmental Sciences Consortium Dauphin Island Sea Laboratory P.O. Box 386 Dauphin Island, AL 36528	G.A. ROUNSEFELL	65	Gulf of Mexico	Fred Rees (205)861-2141
University of Puerto Rico Department of Marine Sciences Mayaguez, Puerto Rico 00708	CRAWFORD MEDUSA	125 56	Caribbean Sea	M.L. Hernandez-Avi (809)832-4040 Extension: 3439
Gulf Coast Research Laboratory P.O. Box Drawer AG Ocean Springs, MS 39565	GULF RESEARCHER	65	Gulf of Mexico	Harold D. Howse (601)875-2244

INSTITUTION	SHIP NAME	LOA (FT)	AREA OF OPERATION	CONTACT
Marine Sciences Research Center State University of New York Stony Brook, NY 11794-5000	ONRUST	55	New York Bight Long Island Sound Hudson River	William M. Wise (516)246-4032
Hobart & William Smith Colleges Geneva, NY 14456	HOBART & WILLIAM SMITH EXPLORER	65	Finger Lakes and Great Lakes	F. Richard Wilkens (315)789-5500 Extension: 213
State University College at Buffalo 1300 Elmwood Avenue Buffalo, NY 14222	C.A. DAMBACH	65	Great Lakes	Robert A. Sweeney (716)878-5422
University of Wisconsin-Milwaukee Center for Great Lakes Studies Milwaukee, WI 53201	NEESKAY	65	Great Lakes	Donald F. Mraz (414)224-3007
University of Maryland Chesapeake Biological Lab Solomons, MD 20688	AQUARIUS ORION	65 62	Chesapeake Bay	Elgin A. Dunnington (301)326-4281
Virginia Institute of Marine Science Gloucester Point Virginia 23062	RETRIEVER	115	Mid-Atlantic Coast Chesapeake Bay	John M. Zeigler (804)642-2111
The Marine Science Consortium Inc. P.O. Box 16 Wallops Island, VA 23337	DELAWARE BAY	50	NJ to VA to 50 miles offshore	Robert W. Hinds (804)824-5636
Bermuda Biological Station St. George's West Bermuda	WEATHER-BIRD	65	Bermuda	Howard S. Barnes (809)297-1880

INSTITUTION	SHIP NAME	LOA (FT)	AREA OF OPERATION	CONTACT
Occidental College Department of Biology 1600 Campus Road Los Angeles, CA 90041	VANTUNA	85	California Coast	John S. Stephens (213)259-2675
NOAA National Undersea Research Program University of North Carolina at Wilmington 601 South College Wilmington, NC 28403	SEAHAWK	80	Atlantic Coast New Enland to Georgia	Frank L. Chapman (919)762-7615

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     POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                 USNS BARTLETT
    NAME:                      MR RICHARD G EVANS
    OFFICE:                    OCEANOGRAPHIC OPS DESK CODE 3101
    ORGANIZATION:              NAVOCEANO
    ADDRESS:                   BAY ST LOUIS
    CITY-STATE:                NSTL MS 39522
    AUTOVON PREFIX:            485
    FTS PREFIX:                494
    COMMERCIAL AREA CODE:      601
    PHONE:                     688-4005


      SHIP DIMENSIONS

    LENGTH:             210.3 FEET
    MAX BEAM:            39.5 FEET
    DISPLACEMENT:        1325 TONS
    DRAUGHT:             18.0 FEET
    CRUISE SPEED:         9.0 KNOTS
    RANGE:               9000 NAUTICAL MILES

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                 USNS BARTLETT             LAST CHANGED 04 FEB 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ...............................................
OUT OF SERVICE                                              MSC/LAVINO

DEP: 22 DEC 86 PORT EVERGLADES FL  HOLIDAY INPORT & UPKEEP
ARR: 03 JAN 87 PORT EVERGLADES FL                                  13 DAY(S)
AREA INDEX:
      ...............................................
OCEANOGRAPHIC RESEARCH                                      NORDA

DEP: 03 JAN 87 PORT EVERGLADES FL  TRANSIT FOR NORDA 1302-37 - BAD WEATHER
ARR: 05 JAN 87 PORT CANAVERAL FL   FIND SAFE HAVEN                  3 DAY(S)
AREA INDEX:

DEP: 07 JAN 87 PORT CANAVERAL FL   TRANSIT FOR NORDA SURVOP 1302-87
ARR: 11 JAN 87 NEWPORT RI                                           5 DAY(S)
AREA INDEX:

DEP: 14 JAN 87 NEWPORT RI          SURVOP NORDA 1302-87
ARR: 26 JAN 87 BERMUDA             FIND SAFE HAVEN                 13 DAY(S
AREA INDEX:

DEP: 30 JAN 87 BERMUDA             AWAITING YARD DETERMINATION FOR TRANSIT
ARR: 31 JAN 87 BERMUDA                                              2 DAY(S)
AREA INDEX:
      ...............................................
OUT OF SERVICE                                              MSC/LAVINO

DEP: 04 FEB 87 BERMUDA             TRANSIT TO YARD/OVERHAUL
ARR: 06 FEB 87 PORT TBD                                             3 DAY(S)
AREA INDEX:

DEP: 06 FEB 87 PORT TBD            YARD/OVERHAUL
ARR: 13 MAR 87 PORT TBD                                            36 DAY(S)
AREA INDEX:

DEP: 13 MAR 87 PORT TBD            RFS
ARR: 17 MAR 87 PORT TBD                                             5 DAY(S)
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AREA INDEX:
OUT OF SERVICE.........................................
DEP: 17 MAR 87 PORT TBD                                  NAVOCEANO
ARR: 20 MAR 87 NEW LONDON CT       NAVO SHAKEDOWN & TRANSIT TO NUSC 1303-87
AREA INDEX:
                                                                4 DAY(S)
OCEANOGRAPHIC RESEARCH.................................
DEP: 24 MAR 87 NEW LONDON CT                             NUSC
ARR: 14 APR 87 NEW LONDON CT       SURVOP NUSC 1304-87
AREA INDEX:
                                                               22 DAY(S)
OCEANOGRAPHIC RESEARCH.................................
DEP: 18 APR 87 NEW LONDON CT                             NORDA
ARR: 22 APR 87 PORT EVERGLADES FL  TRANSIT FOR NORDA 1305-87
AREA INDEX:
                                                                5 DAY(S)
DEP: 27 APR 87 PORT EVERGLADES FL
ARR: 20 MAY 87 PORT EVERGLADES FL  SURVOP NORDA 1305-87
AREA INDEX:
                                                               24 DAY(S)
OCEANOGRAPHIC RESEARCH.................................
DEP: 25 MAY 87 PORT EVERGLADES FL                        NADC
ARR: 18 JUN 87 NEW LONDON CT       SURVOP NADC 1306-87
AREA INDEX:
                                                               25 DAY(S)
OCEANOGRAPHIC RESEARCH.................................
DEP: 22 JUN 87 NEW LONDON CT                             NOSC
ARR: 01 JUL 87 REYKJAVIK IC        TRANSIT FOR NOSC 1307-87
AREA INDEX:
                                                               10 DAY(S)
DEP: 03 JUL 87 REYKJAVIK IC
ARR: 27 JUL 87 REYKJAVIK IC        SURVOP NOSC 1307-87
AREA INDEX:
                                                               25 DAY(S)
OCEANOGRAPHIC RESEARCH.................................
DEP: 30 JUL 87 REYKJAVIK IC                              NRL/NUSC
ARR: 10 AUG 87 NEW LONDON CT       SURVOP NRL/NUSC 1308-87 & TRANSIT
AREA INDEX:
                                                               12 DAY(S)
OCEANOGRAPHIC RESEARCH.................................
DEP: 14 AUG 87 NEW LONDON CT                             APL/JHU
ARR: 07 SEP 87 QUONSET POINT RI    SURVOP APL/JHU 1309-87
AREA INDEX:
                                                               25 DAY(S)
OCEANOGRAPHIC RESEARCH.................................
DEP: 11 SEP 87 QUONSET POINT RI                          NRL
ARR: 25 SEP 87 PORT TBD            SURVOP NRL 1310-87
AREA INDEX:
************************************************************   15 DAY(S)
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**********************************************************
      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                 USNS DE STEIGUER
    NAME:                      MR RICHARD G EVANS
    OFFICE:                    OCEANOGRAPHIC OPS DESK CODE 3101
    ORGANIZATION:              NAVOCEANO
    ADDRESS:                   BAY ST LOUIS
    CITY-STATE:                NSTL MS 39522
    AUTOVON PREFIX:            485
    FTS PREFIX:                494
    COMMERCIAL AREA CODE:      601
    PHONE:                     688-4005


      SHIP DIMENSIONS

    LENGTH:             210.3 FEET
    MAX BEAM:            39.5 FEET
    DISPLACEMENT:        1325 TONS
    DRAUGHT:             18.0 FEET
    CRUISE SPEED:         9.0 KNOTS
    RANGE:               9000 NAUTICAL MILES

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                  USNS DE STEIGUER          LAST CHANGED 03 FEB 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

      ...........................................
OUT OF SERVICE                                              MSC/LAVINO

DEP: 22 DEC 86 SAN DIEGO CA         RFS
ARR: 03 JAN 87 SAN DIEGO CA                                            13 DAY(S)
AREA INDEX:
      ...........................................
OUT OF SERVICE                                              NAVOCEANO

DEP: 07 JAN 87 SAN DIEGO CA         SPONSOR SHAKEDOWN
ARR: 09 JAN 87 SAN DIEGO CA                                             3 DAY(S)
AREA INDEX:
      ...........................................
OCEANOGRAPHIC RESEARCH                                      CSDG-1

DEP: 21 JAN 87 SAN DIEGO CA         SURVOP CSDG-1 1202-87
ARR: 27 JAN 87 SAN DIEGO CA                                             7 DAY(S)
AREA INDEX:
      ...........................................
OCEANOGRAPHIC RESEARCH                                      NCEL

DEP: 03 FEB 87 SAN DIEGO CA         TRANSIT FOR SURVOP NCEL 1203-87
ARR: 05 FEB 87 PORT HUENEME CA                                          3 DAY(S)
AREA INDEX:

DEP: 07 FEB 87 PT HUENEME CA        SURVOP NCEL 1203-87
ARR: 07 FEB 87 PT HUENEME CA                                            1 DAY(S)
AREA INDEX:

DEP: 09 FEB 87 PT HUENEME CA        ENROUTE
ARR: 10 FEB 87 SAN DIEGO CA                                             2 DAY(S)
AREA INDEX:
      ...........................................
OCEANOGRAPHIC RESEARCH                                      NOSC

DEP: 13 FEB 87 SAN DIEGO CA         SURVOPS NOSC 1204-87 LEG 1
ARR: 20 FEB 87 PT HUENEME CA                                            8 DAY(S)
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AREA INDEX:

DEP: 21 FEB 87 PT HUENEME CA       SURVOPS 1204-87 LEG 2
ARR: 04 MAR 87 PT HUENEME CA                                      12 DAY(S)
AREA INDEX:

DEP: 07 MAR 87 PT HUENEME CA       NOSC 1204-87
ARR: 15 MAR 87 PT HUENEME CA                                       9 DAY(S)
AREA INDEX:

DEP: 16 MAR 87 PT HUENEME CA       NOSC 1204-87
ARR: 23 MAR 87 SAN DIEGO CA                                        8 DAY(S)
AREA INDEX:
          ...................................
OCEANOGRAPHIC RESEARCH            J LOSEE             NOSC

DEP: 27 MAR 87 SAN DIEGO CA        SURVOP NOSC 1205-87
ARR: 28 MAR 87 OAKLAND CA          CODE 524                        2 DAY(S)
AREA INDEX:
          ...................................
OUT OF SERVICE                                        MSC/LAVINO

DEP: 08 APR 87 OAKLAND CA          UPKEEP
ARR: 28 APR 87 OAKLAND CA                                         21 DAY(S)
AREA INDEX:
          ...................................
OCEANOGRAPHIC RESEARCH                                APL/JHU

DEP: 28 APR 87 OAKLAND CA          SURVOP APL/JHU 1206-87
ARR: 18 MAY 87 SAN DIEGO CA                                       21 DAY(S)
AREA INDEX:
          ...................................
OCEANOGRAPHIC RESEARCH                                OPEN

DEP: 22 MAY 87 SAN DIEGO CA        OPEN
ARR: 05 JUN 87 OAKLAND CA                                         15 DAY(S)
AREA INDEX: OPEN
          ...................................
OCEANOGRAPHIC RESEARCH                                NORDA

DEP: 10 JUN 87 OAKLAND CA          SURVOP NORDA 1208-87
ARR: 29 JUN 87 PT ANGELES WA                                      20 DAY(S)
AREA INDEX:
          ...................................
OCEANOGRAPHIC RESEARCH                                NOSC

DEP: 03 JUL 87 PT ANGELES WA       SURVOP NOSC 1209-87
ARR: 20 JUL 87 SEATTLE WA                                         18 DAY(S)
AREA INDEX:
          ...................................
OCEANOGRAPHIC RESEARCH                                NORDA

DEP: 24 JUL 87 SEATTLE WA          SURVOP NORDA 1210-87
ARR: 17 AUG 87 SEATTLE WA                                         25 DAY(S)
AREA INDEX:
          ...................................
OUT OF SERVICE                                        MSC/LAVINO

DEP: 17 AUG 87 SEATTLE WA          UPKEEP
ARR: 04 SEP 87 SEATTLE WA                                         19 DAY(S)
AREA INDEX:
          ...................................
OCEANOGRAPHIC RESEARCH                                NORDA

DEP: 04 SEP 87 SEATTLE WA          SURVOP NORDA 1211-87
ARR: 21 SEP 87 PT ANGELES WA                                      18 DAY(S)
AREA INDEX:
          ...................................
OCEANOGRAPHIC RESEARCH                                NPGS

DEP: 24 SEP 87 PT ANGELES WA       SURVOP NPGS 1212-87 & TRANSIT
ARR: 30 SEP 87 PT HUENEME CA                                       7 DAY(S)
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AREA INDEX:
                 ...............................................
OCEANOGRAPHIC RESEARCH                                          NAVOCEANO

DEP: 24 NOV 87 SAN DIEGO CA          NAVO OPS
ARR: 26 NOV 87 SAN DIEGO CA                                                  3 DAY(S)
AREA INDEX:
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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                 USNS LYNCH
   NAME:                      MR RICHARD G EVANS
   OFFICE:                    OCEANOGRAPHIC OPS DESK CODE 3101
   ORGANIZATION:              NAVOCEANO
   ADDRESS:                   BAY ST LOUIS
   CITY-STATE:                NSTL MS 39522
   AUTOVON PREFIX:            485
   FTS PREFIX:                494
   COMMERCIAL AREA CODE:      601
   PHONE:                     688-4005


     SHIP DIMENSIONS

   LENGTH:             208.8 FEET
   MAX BEAM:            39.0 FEET
   DISPLACEMENT:        1409 TONS
   DRAUGHT:             18.0 FEET
   CRUISE SPEED:         9.0 KNOTS
   RANGE:              12000 NAUTICAL MILES

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                USNS LYNCH                LAST CHANGED 03 FEB 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

      .......................................
OUT OF SERVICE                                        MSC/LAVINO

DEP: 17 DEC 86 ROTA SP            TRANSIT
ARR: 04 JAN 87 PORT EVERGLADES FL                                19 DAY(S)
AREA INDEX:

DEP: 04 JAN 87 PORT EVERGLADES FL OVERHAUL/YARD
ARR: 30 JAN 87 PORT EVERGLADES FL                                27 DAY(S)
AREA INDEX:

DEP: 30 JAN 87 PORT EVERGLADES FL RFS
ARR: 31 JAN 87 PORT EVERGLADES FL                                 2 DAY(S)
AREA INDEX:
      .......................................
OUT OF SERVICE                  B NELSON              NAVOCEANO

DEP: 31 JAN 87 PORT EVERGLADES FL SPONSOR SHAKEDOWN & TRANSIT
ARR: 05 FEB 87 PANAMA CITY FL                                     6 DAY(S)
AREA INDEX:
      .......................................
OCEANOGRAPHIC RESEARCH                                NUSC

DEP: 09 FEB 87 PANAMA CITY FL     SURVOPS NUSC 704-87
ARR: 19 FEB 87 PANAMA CITY FL                                    11 DAY(S)
AREA INDEX:
      .......................................
OCEANOGRAPHIC RESEARCH                                NORDA

DEF: 23 FEB 87 PANAMA CITY FL     SURVOPS NORDA 705-87  LEG 1
ARR: 02 MAR 87 PORT EVERGLADES FL                                 8 DAY(S)
AREA INDEX:

DEP: 05 MAR 87 PORT EVERGLADES FL SURVOPS NORDA 705-87  LEG2
ARR: 20 MAR 87 PANAMA CITY FL                                    16 DAY(S)
AREA INDEX:
      .......................................
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OCEANOGRAPHIC RESEARCH                                      NUSC

DEP: 25 MAR 87 PANAMA CITY FL       SURVOPS NUSC 706-87
ARR: 30 MAR 87 PANAMA CITY FL                                          6 DAY(S)
AREA INDEX:

DEP: 30 MAR 87 PANAMA CITY FL       TRANSIT
ARR: 03 APR 87 PORT EVERGLADES FL                                      5 DAY(S)
AREA INDEX:
      .......................................
OCEANOGRAPHIC RESEARCH                                      NOSC

DEP: 07 APR 87 PORT EVERGLADES FL  SURVOPS NOSC 707-87
ARR: 29 APR 87 PORT EVERGLADES FL                                     23 DAY(S)
AREA INDEX:
      .......................................
OCEANOGRAPHIC RESEARCH                                      APL/JHU

DEP: 04 MAY 87 PORT EVERGLADES FL  SURVOPS APL/JHU 708-87
ARR: 26 MAY 87 PORT EVERGLADES FL                                     23 DAY(S)
AREA INDEX:
      .......................................
OUT OF SERVICE                                              MSC/LAVINO

DEP: 26 MAY 87 PORT EVERGLADES FL  UPKEEP
ARR: 08 JUN 87 PORT EVERGLADES FL                                     14 DAY(S)
AREA INDEX:
      .......................................
OCEANOGRAPHIC RESEARCH                                      APL/JHU

DEP: 08 JUN 87 PORT EVERGLADES FL  SURVOP APL/JHU 709-87
ARR: 26 JUN 87 NEW LONDON CT                                          19 DAY(S)
AREA INDEX:
      .......................................
OCEANOGRAPHIC RESEARCH                                      NUSC

DEP: 30 JUN 87 NEW LONDON CT       TRANSIT FOR NUSC 710-87
ARR: 03 JUL 87 HALIFAX NS                                              4 DAY(S)
AREA INDEX:

DEP: 06 JUL 87 HALIFAX NS          SURVOP NUSC 710-87 LEG 1
ARR: 30 JUL 87 REYKJAVIK IC                                           25 DAY(S)
AREA INDEX:

DEP: 03 AUG 87 REYKJAVIK IC        SURVOP NUSC 710-87 LEG2
ARR: 15 AUG 87 HALIFAX NS                                             13 DAY(S)
AREA INDEX:

DEP: 17 AUG 87 HALIFAX NS          SURVOP NUSC 710-87 LEG 3
ARR: 20 AUG 87 NEW LONDON CT                                           4 DAY(S)
AREA INDEX:
      .......................................
OCEANOGRAPHIC RESEARCH                                      NORDA

DEP: 25 AUG 87 NEW LONDON CT       SURVOP NORDA 711-87
ARR: 16 SEP 87 PORT TBD                                               23 DAY(S)
AREA INDEX:
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     POINT OF CONTACT INFORMATION (SCHEDULES)

  SHIP NAME:                  ERLINE
  NAME:                       OFFICER IN CHARGE
  OFFICE:
  ORGANIZATION:               TUDOR HILL LABORATORY
  ADDRESS:                    FLEET POST OFFICE
  CITY-STATE:                 NEW YORK NY 09560
  FTS PREFIX:                 809
  COMMERCIAL AREA CODE:       809
  PHONE:                      294-0170


     SHIP DIMENSIONS

  LENGTH:            105.0 FEET
  MAX BEAM:           20.7 FEET
  DISPLACEMENT:         96 TONS
  DRAUGHT:             5.9 FEET
  CRUISE SPEED:       10.0 KNOTS
  RANGE:              1200 NAUTICAL MILES

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                ERLINE                   LAST CHANGED 23 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87
              ...........................................
OCEANOGRAPHIC RESEARCH                               NUSC

DEP: 23 FEB 87 BERMUDA          A-2
ARR: 28 FEB 87 BERMUDA                                        6 DAY(S)
AREA INDEX: NA6

DEP: 25 APR 87 BERMUDA          BOTTOM BAFFLE
ARR: 07 MAY 87 BERMUDA                                       13 DAY(S)
AREA INDEX: NA6

DEP: 08 MAY 87 BERMUDA          SSTD
ARR: 13 MAY 87 BERMUDA                                        6 DAY(S)
AREA INDEX: NA6
              ...........................................
OCEANOGRAPHIC RESEARCH                               NORDA

DEP: 14 MAY 87 BERMUDA          NORDA
ARR: 16 JUN 87 BERMUDA                                       34 DAY(S)
AREA INDEX: NA6
              ...........................................
OCEANOGRAPHIC RESEARCH                               NUSC

DEP: 01 SEP 87 BERMUDA          DNA
ARR: 20 SEP 87 BERMUDA                                       20 DAY(S)
AREA INDEX: NA6

DEP: 22 SEP 87 BERMUDA          TARP
ARR: 30 SEP 87 BERMUDA                                        9 DAY(S)
AREA INDEX: NA6
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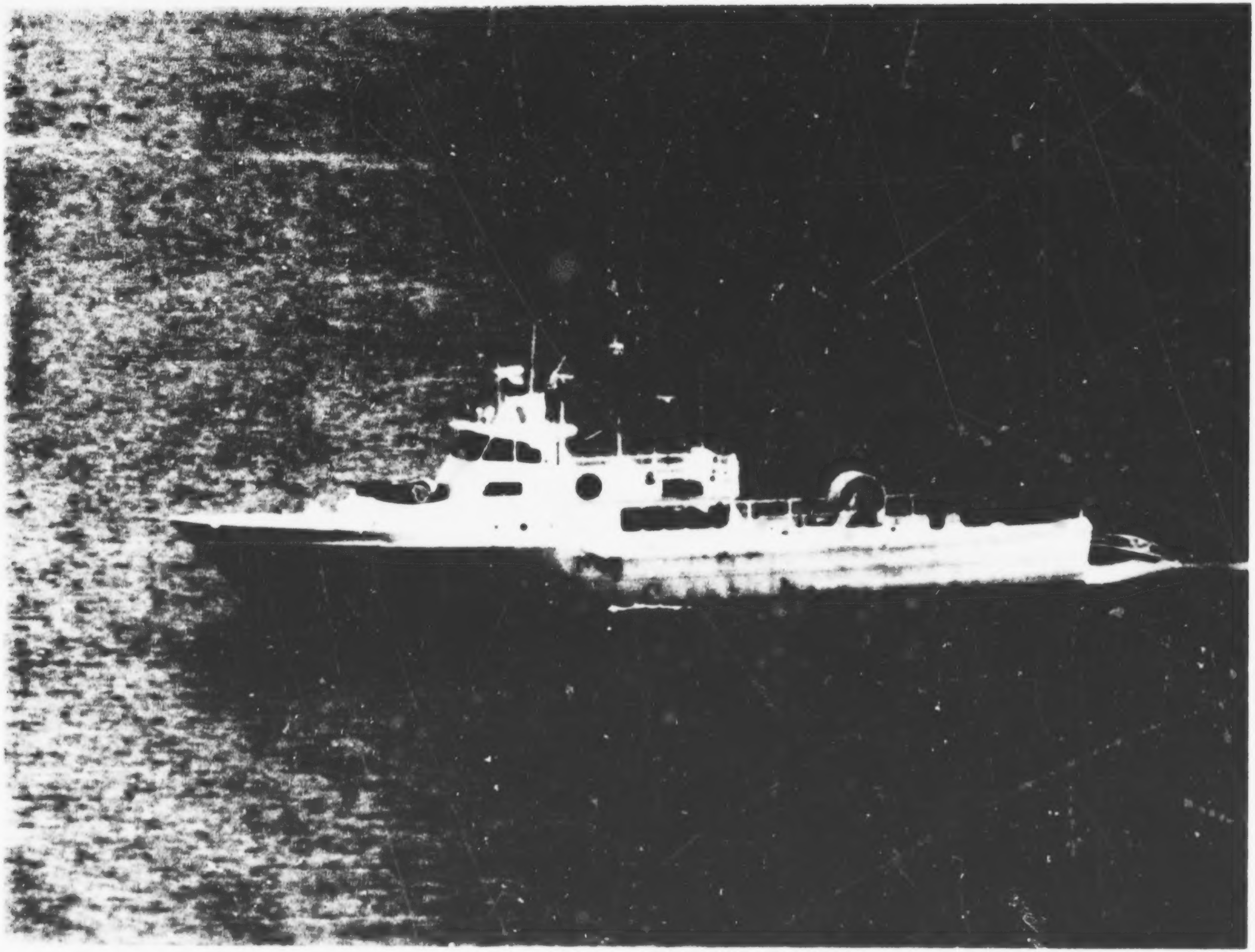
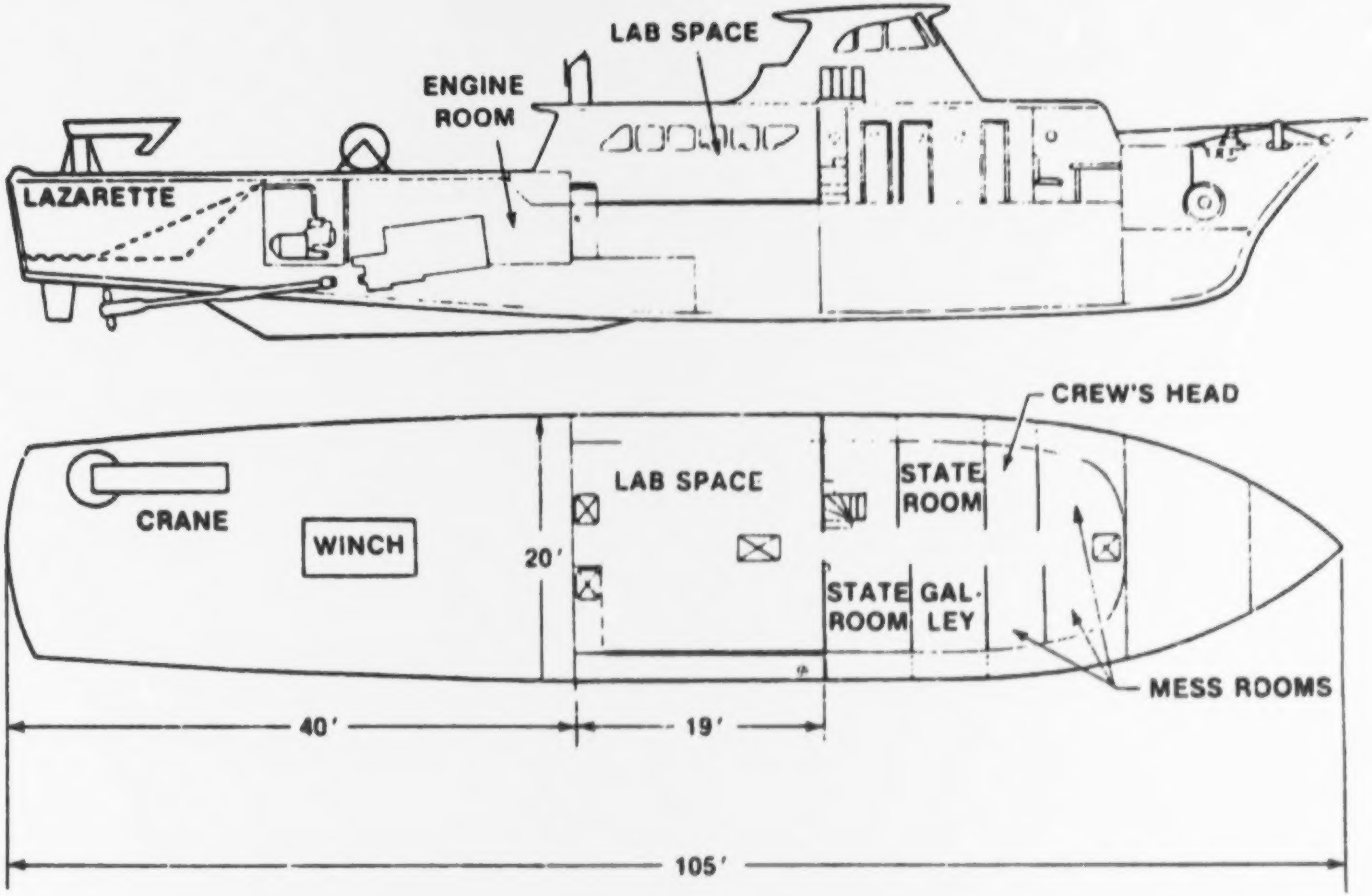


R/V ERLINE


LAB SPACE
ENGINE ROOM
LAZARETTE
CREW'S HEAD
STATE ROOM
LAB SPACE
CRANE
WINCH
20'
STATE ROOM
GAL-LEY
MESS ROOMS
40'
19'
105'

R/V ERLINE

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******************************************************************
     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                    USCGC GLACIER
   NAME:                         CAPT GEORGE F MARTIN
   OFFICE:                       COMMANDANT (G-OIO)
   ORGANIZATION:                 U.S. COAST GUARD
   ADDRESS:                      2100 SECOND STREET, SW
   CITY-STATE:                   WASHINGTON DC 20593
   FTS PREFIX:                   202
   COMMERCIAL AREA CODE:         202
   PHONE:                        267-1458


     SHIP DIMENSIONS

   LENGTH:              310.0 FEET
   MAX BEAM:             74.1 FEET
   DISPLACEMENT:         6406 TONS
   DRAUGHT:              28.1 FEET
   CRUISE SPEED:         12.0 KNOTS
   RANGE:               25000 NAUTICAL MILES
******************************************************************
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                  USCGC GLACIER               LAST CHANGED 23 JAN 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87
         ..........................................
DEEP FREEZE 87                                     USN/NSF

DEP: 01 JAN 87 ANTARCTICA          RESEARCH/RESUPPLY  - TRANSIT OCEAN AREAS
ARR: 10 APR 87 PORTLAND OR         AN6,SP7,SP4,SP1,NP11,NP8,NP9    100 DAY(S)
AREA INDEX: AN9    AN8    AN7    AN11   AN10
         ..........................................
OUT OF SERVICE                                     USCG

DEP: 11 APR 87 PORTLAND OR         STATUS UNCERTAIN - CONTACT POC FOR
ARR: 31 DEC 87 PORT TBD            FURTHER INFORMATION & SCHEDULE 265 DAY(S)
AREA INDEX: NP9
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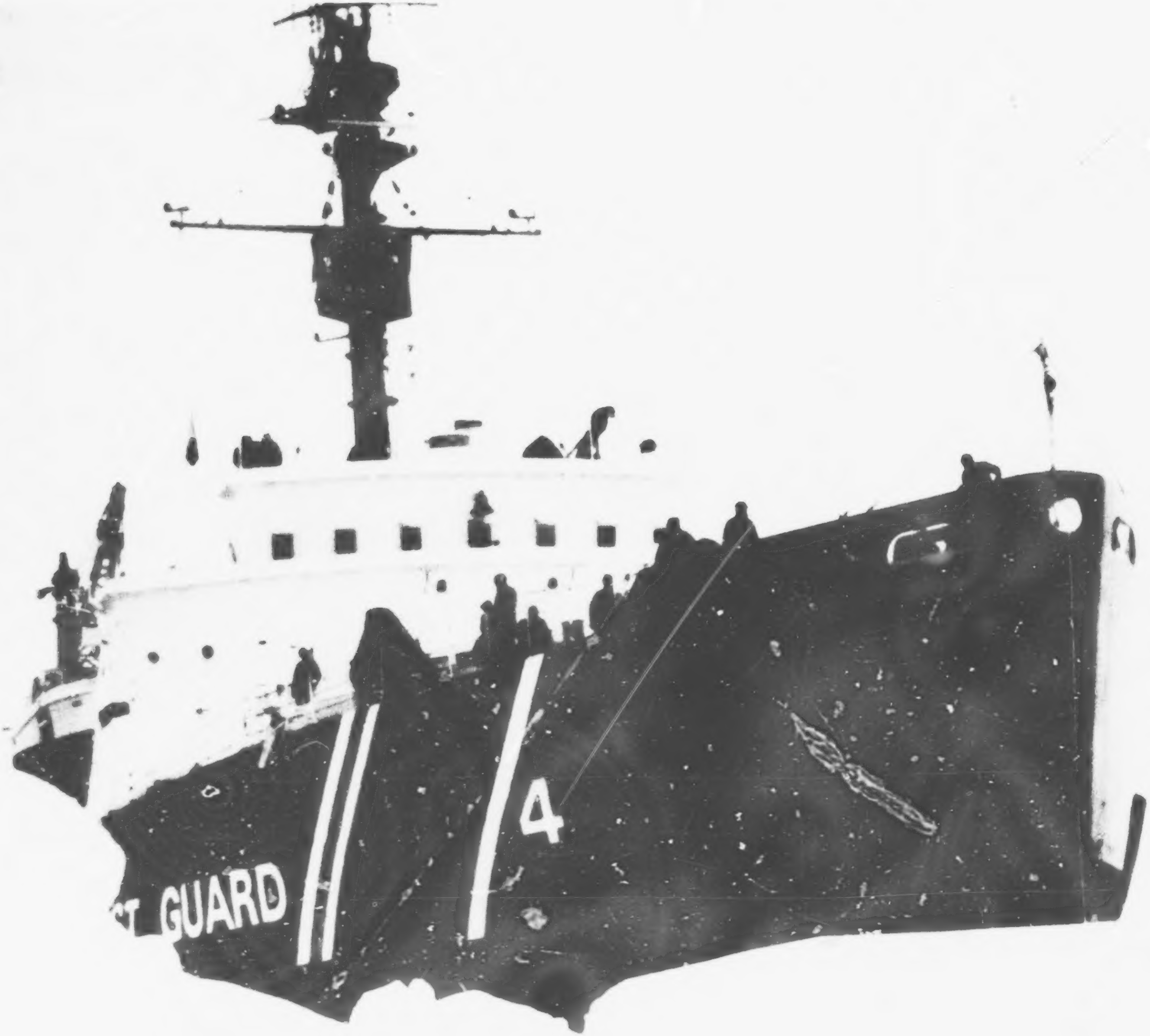

USCGC GLACER

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                 USCGC NORTHWIND
   NAME:                      CAPT GEORGE F MARTIN
   OFFICE:                    COMMANDANT (G-OIO)
   ORGANIZATION:              U.S. COAST GUARD
   ADDRESS:                   2100 SECOND STREET, SW
   CITY-STATE:                WASHINGTON DC 20593
   FTS PREFIX:                202
   COMMERCIAL AREA CODE:      202
   PHONE:                     267-1458


     SHIP DIMENSIONS

   LENGTH:            269.0 FEET
   MAX BEAM:           63.5 FEET
   DISPLACEMENT:       3502 TONS
   DRAUGHT:            25.9 FEET
   CRUISE SPEED:       10.5 KNOTS
   RANGE:             38000 NAUTICAL MILES

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                USCGC NORTHWIND         LAST CHANGED 23 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

         ..........................................
OUT OF SERVICE                                         USCG

DEP: 01 JAN 87 CURTIS BAY MD       MAINTENANCE
ARR: 25 APR 87 WILMINGTON NC                                  115 DAY(S)
AREA INDEX: NA6

DEP: 25 APR 87 WILMINGTON NC       TRAINING
ARR: 25 MAY 87 WILMINGTON NC                                   31 DAY(S)
AREA INDEX: NA6
         ..........................................
ARCTIC EAST SUMMER                                     USCG/USN/MSC

DEP: 25 MAY 87 WILMINGTON NC       RESEARCH/RESUPPLY  - TRANSIT OCEAN AREAS
ARR: 04 OCT 87 WILMINGTON NC       AR1                        133 DAY(S)
AREA INDEX: NA6   NA4   AR11   AR9   NA1
         ..........................................
OUT OF SERVICE                                         USCG

DEP: 05 OCT 87 WILMINGTON NC       MAINTENANCE
ARR: 31 DEC 87 WILMINGTON NC                                   88 DAY(S)
AREA INDEX: NA6
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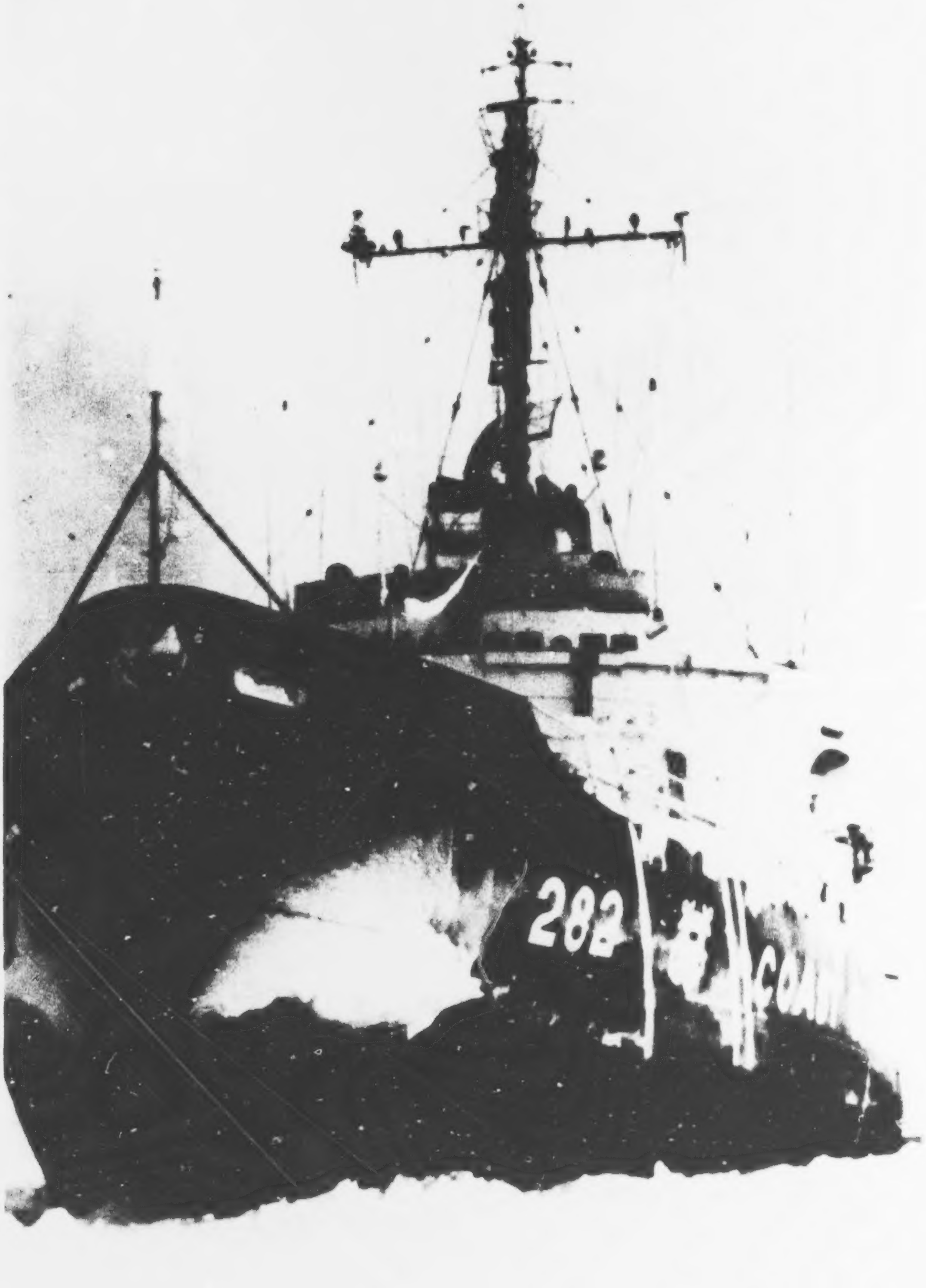

USCGC NORTHWIND

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       POINT OF CONTACT INFORMATION (SCHEDULES)

     SHIP NAME:                 USCGC POLAR SEA
     NAME:                      CAPT GEORGE F MARTIN
     OFFICE:                    COMMANDANT (G-OIO)
     ORGANIZATION:              U.S. COAST GUARD
     ADDRESS:                   2100 SECOND STREET, SW
     CITY-STATE:                WASHINGTON DC 20593
     FTS PREFIX:                202
     COMMERCIAL AREA CODE:      202
     PHONE:                     267-1458


       SHIP DIMENSIONS

     LENGTH:             399.0 FEET
     MAX BEAM:            83.5 FEET
     DISPLACEMENT:       10863 TONS
     DRAUGHT:             28.0 FEET
     CRUISE SPEED:        13.0 KNOTS
     RANGE:              28275 NAUTICAL MILES

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                 USCGC POLAR SEA          LAST CHANGED 23 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87
        ......................................
DEEP FREEZE 87                                           USN/NSF

DEP: 01 JAN 87 ANTARCTICA         RESEARCH/RESUPPLY - TRANSIT OCEAN AREAS
ARR: 12 APR 87 SEATTLE WA         NP11, NP8, NP9                 102 DAY(S)
AREA INDEX: AN10  AN6   SP7   SP4   SP1
        ......................................
OUT OF SERVICE                                           USCG

DEP: 13 APR 87 SEATTLE WA         MAINTENANCE
ARR: 15 AUG 87 SEATTLE WA                                        125 DAY(S)
AREA INDEX: NP9

DEP: 16 AUG 87 SEATTLE WA         TRAINING
ARR: 31 AUG 87 SEATTLE WA                                         16 DAY(S)
AREA INDEX: NP9
        ......................................
ARCTIC WEST SUMMER                                       USCG

DEP: 01 SEP 87 SEATTLE WA         RESEARCH
ARR: 15 OCT 87 SEATTLE WA                                         45 DAY(S)
AREA INDEX: NP9   NP6   NP5   NP2   NP3
        ......................................
OUT OF SERVICE                                           USCG

DEP: 16 OCT 87 SEATTLE WA         MAINTENANCE
ARR: 31 DEC 87 SEATTLE WA                                         77 DAY(S)
AREA INDEX: NP9
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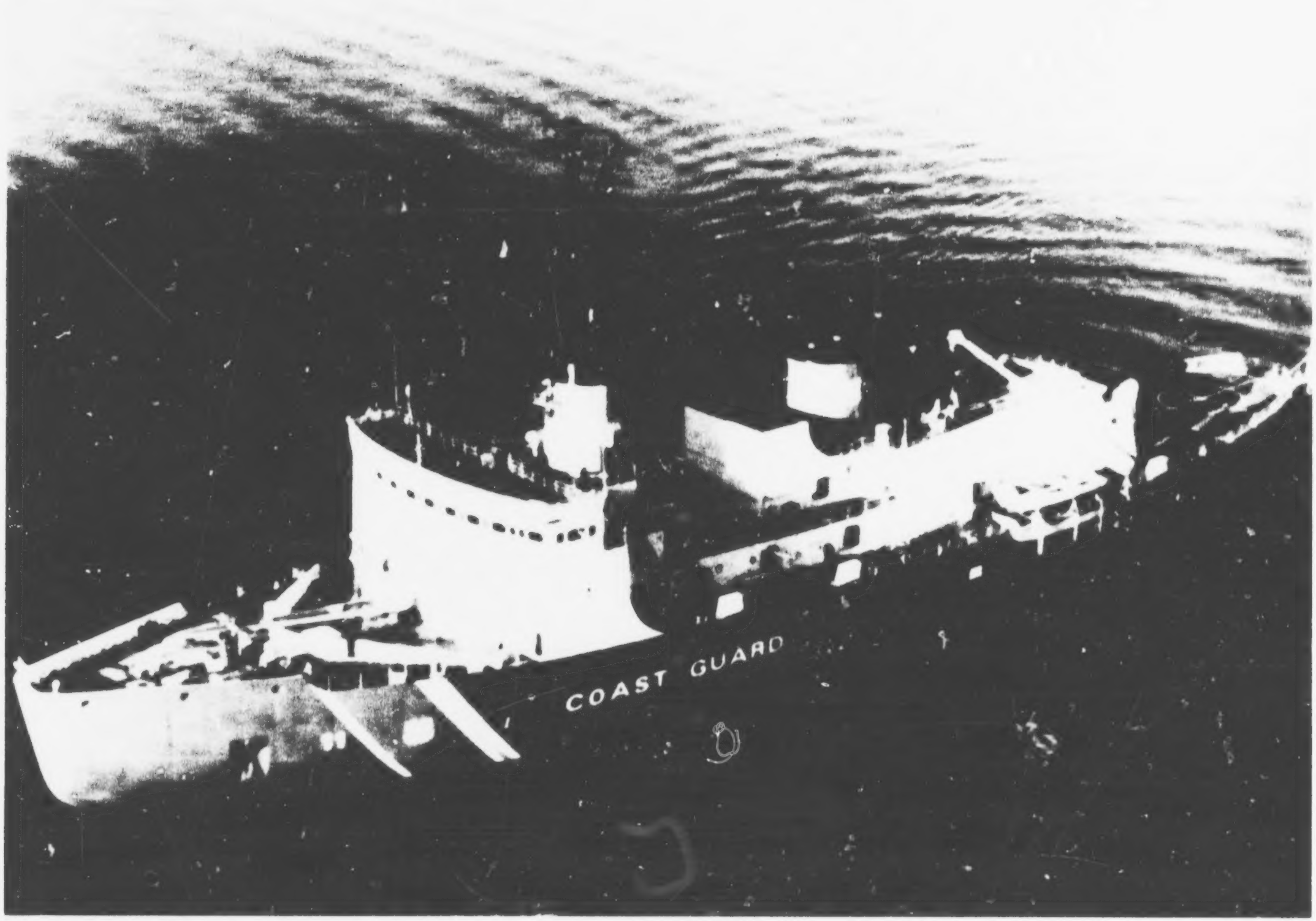
COAST GUARD

USCGC POLAR SEA

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***********************************************************
      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                    USCGC POLAR STAR
    NAME:                         CAPT GEORGE F MARTIN
    OFFICE:                       COMMANDANT (G-OIO)
    ORGANIZATION:                 U.S. COAST GUARD
    ADDRESS:                      2100 SECOND STREET, SW
    CITY-STATE:                   WASHINGTON DC 20593
    FTS PREFIX:                   202
    COMMERCIAL AREA CODE:         202
    PHONE:                        267-1458


      SHIP DIMENSIONS

    LENGTH:           399.0 FEET
    MAX BEAM:          83.5 FEET
    DISPLACEMENT:     10863 TONS
    DRAUGHT:           28.0 FEET
    CRUISE SPEED:      13.0 KNOTS
    RANGE:            28275 NAUTICAL MILES

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                 USCGC POLAR STAR          LAST CHANGED 23 JAN 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

             ...........................................
OUT OF SERVICE                                          USCG

DEP: 01 JAN 87 SEATTLE WA          MAINTENANCE
ARR: 15 FEB 87 SEATTLE WA                                        46 DAY(S)
AREA INDEX: NP9
             ...........................................
ARCTIC WEST WINTER                                      USCG

DEP: 16 FEB 87 SEATTLE WA          RESEARCH
ARR: 25 APR 87 SEATTLE WA                                        69 DAY(S)
AREA INDEX: NP9   NP6   NP5   NP2   NP3
             ...........................................
OUT OF SERVICE                                          USCG

DEP: 26 APR 87 SEATTLE WA          MAINTENANCE
ARR: 09 OCT 87 SEATTLE WA                                       167 DAY(S)
AREA INDEX: NP9

DEP: 10 OCT 87 SEATTLE WA          TRAINING
ARR: 09 NOV 87 SAN DIEGO CA                                      31 DAY(S)
AREA INDEX: NP9
             ...........................................
DEEP FREEZE 88                                          USN/NSF

DEP: 10 NOV 87 SAN DIEGO CA        RESEARCH/RESUPPLY  TRANSIT OCEAN AREAS
ARR: 31 DEC 87 ANTARCTICA          NP9                           52 DAY(S)
AREA INDEX: AN9   SP9A  SP6A  SP3A  NP13
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COAST GUARD
10

USCGC POLAR STAR

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                USCGC WESTWIND
    NAME:                     CAPT GEORGE F MARTIN
    OFFICE:                   COMMANDANT (G-OIO)
    ORGANIZATION:             U.S. COAST GUARD
    ADDRESS:                  2100 SECOND STREET, SW
    CITY-STATE:               WASHINGTON DC 20593
    FTS PREFIX:               202
    COMMERCIAL AREA CODE:     202
    PHONE:                    267-1458


      SHIP DIMENSIONS

    LENGTH:            269.0 FEET
    MAX BEAM:           63.5 FEET
    DISPLACEMENT:       3502 TONS
    DRAUGHT:            25.9 FEET
    CRUISE SPEED.       10.5 KNOTS
    RANGE:             38000 NAUTICAL MILES

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                USCGC WESTWIND          LAST CHANGED 23 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

      ........................................
OUT OF SERVICE                                         USCG

DEP: 01 JAN 87 CURTIS BAY MD       MAINTENANCE
ARR: 31 MAR 87 MOBILE AL                                         90 DAY(S)
AREA INDEX: NA6   NA9

DEP: 01 APR 87 MOBILE AL           MAINTENANCE
ARR: 31 AUG 87 MOBILE AL                                        153 DAY(S)
AREA INDEX: NA9

DEP: 01 SEP 87 MOBILE AL           TRAINING
ARR: 30 SEP 87 MOBILE AL                                         30 DAY(S)
AREA INDEX: NA9
      ........................................
DEEP FREEZE 88                                         USN/NSF

DEP: 01 OCT 87 MOBILE AL           RESEARCH/RESUPPLY  - TRANSIT OCEAN AREAS
ARR: 31 DEC 87 ANTARCTICA          AN9                           92 DAY(S)
AREA INDEX: NA9   NP13  SP3A  SP6A  SP9A
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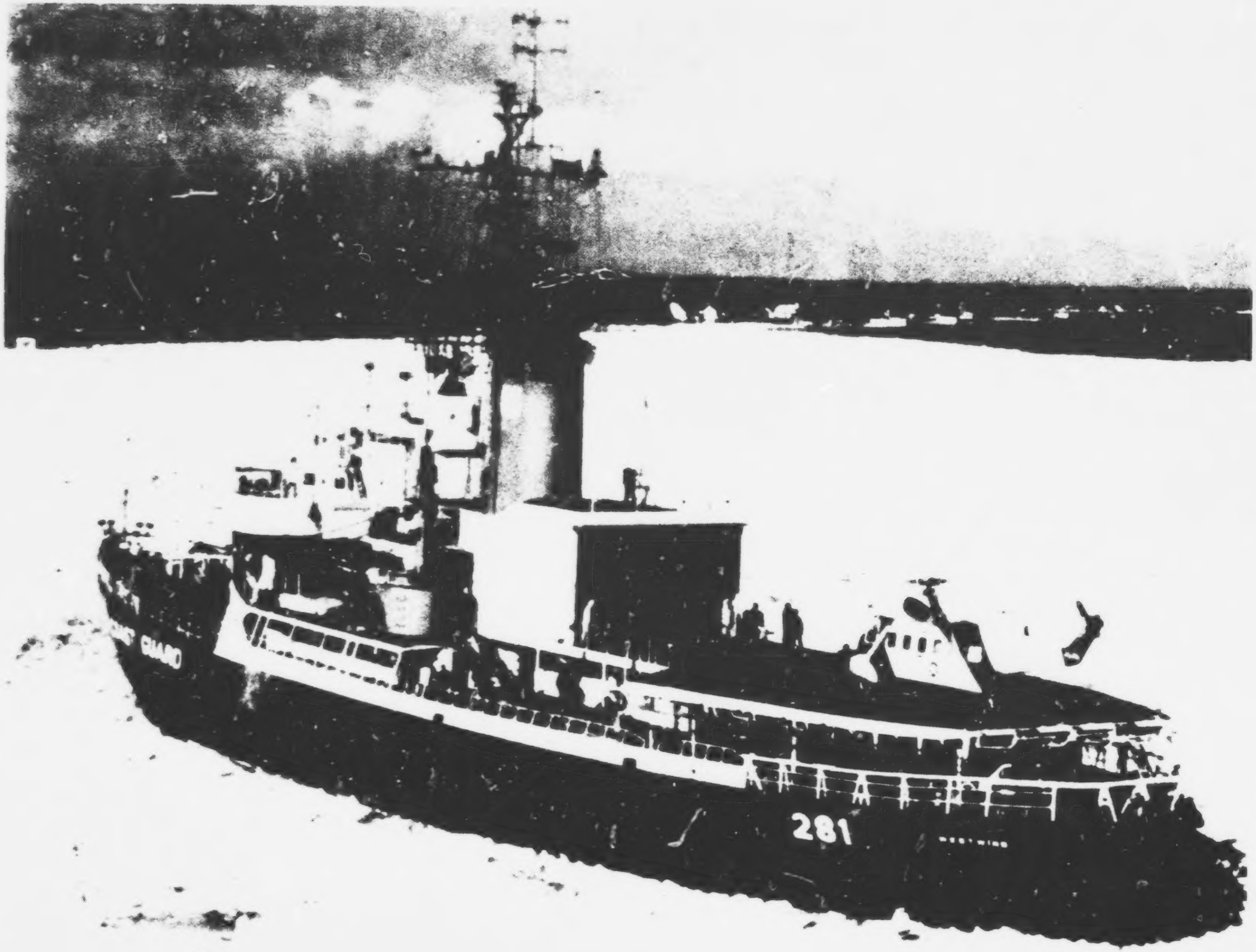
COAST GUARD
281
WESTWIND

USCGC WESTWIND

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                POLAR DUKE
    NAME:                     RONALD R. LA COUNT
    OFFICE:                   OPERATIONS MANAGER  OFFICE OF POLAR PROGRAMS
    ORGANIZATION:             NATIONAL SCIENCE FOUNDATION
    ADDRESS:                  1800 G ST. NW
    CITY-STATE:               WASHINGTON DC 20550
    AUTOVON PREFIX:           294
    FTS PREFIX:               202
    COMMERCIAL AREA CODE:     202
    PHONE:                    357-7808


      SHIP DIMENSIONS

    LENGTH:          219.0 FEET
    MAX BEAM:         43.0 FEET
    DISPLACEMENT:    1645  TONS
    DRAUGHT:          19.0 FEET
    CRUISE SPEED:     12.0 KNOTS
    RANGE:           29952 NAUTICAL MILES

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                 POLAR DUKE                  LAST CHANGED 05 NOV 86

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      ............................................
OCEANOGRAPHIC RESEARCH           QUENTIN                 NSF

DEP: 06 DEC 86 PUNTA ARENAS CHILE  MARINE BIO. RACER PROJ. ELEPHANT IS GEOL
ARR: 07 FEB 87 PUNTA ARENAS CHILE  SEAL/PENQUIN, KRILL WORK          64 DAY(S)
AREA INDEX: SP9A  SP5A  AN9
      ............................................
OUT OF SERVICE                                           NSF

DEP: 07 FEB 87 PUNTA ARENAS CHILE  INPORT & UPKEEP
ARR: 14 FEB 87 PUNTA ARENAS CHILE                             8 DAY(S)
AREA INDEX: SP9A
      ............................................
OCEANOGRAPHIC RESEARCH           DETRICH                 NSF

DEP: 14 FEB 87 PUNTA ARENAS CHILE  MULTIPLE SCIENCE PROJECTS
ARR: 05 APR 87 PUNTA ARENAS CHILE  RACER PROJECT, FISH WORK          51 DAY(S)
AREA INDEX: SP9A  SP5A  AN9
      ............................................
OUT OF SERVICE                                           NSF

DEP: 05 APR 87 PUNTA ARENAS CHILE  INPORT & UPKEEP
ARR: 11 APR 87 PUNTA ARENAS CHILE                             7 DAY(S)
AREA INDEX: SP9A
      ............................................
OCEANOGRAPHIC RESEARCH           DETRICH                 NSF

DEP: 11 APR 87 PUNTA ARENAS CHILE  PERS. XFER & MULTIPLE SCIENCE PROJECTS
ARR: 05 MAY 87 PUNTA ARENAS CHILE  FISH WORK, GEOLOGY                25 DAY(S)
AREA INDEX: SP9A  SP5A  AN9
      ............................................
OUT OF SERVICE                                           NSF

DEP: 05 MAY 87 PUNTA ARENAS CHILE  INPORT & UPKEEP
ARR: 13 MAY 87 PUNTA ARENAS CHILE                             9 DAY(S)
AREA INDEX: SP9A
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OCEANOGRAPHIC RESEARCH                                  NSF

DEP: 13 MAY 87 PUNTA ARENAS CHILE  CRUISE V-87 OPEN FOR SCIENCE PROJECTS
ARR: 31 MAY 87 PUNTA ARENAS CHILE                                  19 DAY(S)
AREA INDEX: OPEN
      .........................................
OUT OF SERVICE                                          NSF

DEP: 31 MAY 87 PUNTA ARENAS CHILE  INPORT & UPKEEP
ARR: 07 JUN 87 PUNTA ARENAS CHILE                                   8 DAY(S)
AREA INDEX: SP9A
      .........................................
OCEANOGRAPHIC RESEARCH           QUENTIN/ROSS           NSF

DEP: 07 JUN 87 PUNTA ARENAS CHILE  MULTIPLE SCIENCE PROJECTS
ARR: 15 JUL 87 PUNTA ARENAS CHILE  2ND WINTER CRUISE PENINSULA AR  39 DAY(S)
AREA INDEX: SP9A
      .........................................
OUT OF SERVICE                                          NSF

DEP: 15 JUL 87 PUNTA ARENAS CHILE  INPORT & UPKEEP
ARR: 23 JUL 87 PUNTA ARENAS CHILE                                   9 DAY(S)
AREA INDEX: SP9A

DEP: 23 JUL 87 PUNTA ARENAS CHILE  TRANSIT FOR INSTALLATION OF SCIENCE
ARR: 28 JUL 87 TALCAHUANO CHILE    UPGRADE III                      6 DAY(S)
AREA INDEX: SP9A  SP6A

DEP: 28 JUL 87 TALCAHUANO CHILE    SHIPYARD
ARR: 01 OCT 87 TALCAHUANO CHILE                                    66 DAY(S)
AREA INDEX: SP6A

DEP: 01 OCT 87 TALCAHUANO CHILE    SHAKEDOWN NEW SCIENCE EQUIPMENT
ARR: 10 OCT 87 PUNTA ARENAS CHILE                                  10 DAY(S)
AREA INDEX: SP6A  SP9A

DEP: 11 OCT 87 PUNTA ARENAS CHILE  INPORT/UPKEEP
ARR: 22 OCT 87 PUNTA ARENAS CHILE                                  12 DAY(S)
AREA INDEX: SP9A
      .........................................
OCEANOGRAPHIC RESEARCH                                  NSF

DEP: 22 OCT 87 PUNTA ARENAS CHILE  TO BE DETERMINED- PALMER STA CREW RELIEF
ARR: 05 NOV 87 PUNTA ARENAS CHILE  BEGIN AUSTRAL SUMMER SEASON     15 DAY(S)
AREA INDEX: SP9A
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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                     ALBATROSS IV
   NAME:                          CDR. R C ARNOLD
   OFFICE:                        CHIEF MARINE SERVICES DIVISION
   ORGANIZATION:                  NOAA ATLANTIC MARINE CENTER
   ADDRESS:                       439 WEST YORK STREET
   CITY-STATE:                    NORFOLK VA 23510
   FTS PREFIX:                    827
   COMMERCIAL AREA CODE:          804
   PHONE:                         441-6440


     SHIP DIMENSIONS

   LENGTH:              187.0 FEET
   MAX BEAM:             33.0 FEET
   DISPLACEMENT:         1089 TONS
   DRAUGHT:              16.2 FEET
   CRUISE SPEED:         12.0 KNOTS
   RANGE:                4300 NAUTICAL MILES

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                 ALBATROSS IV            LAST CHANGED 16 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

          . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
NMFS                                                        NOAA

DEP: 02 JAN 87 WOODS HOLE          SHIPYARD
ARR: 11 FEB 87 WOODS HOLE                                           41 DAY(S)
AREA INDEX: NA6

DEP: 17 FEB 87 WOODS HOLE          FISHING POWER
ARR: 27 FEB 87 WOODS HOLE            87-01                          11 DAY(S)
AREA INDEX: NA6

DEP: 02 MAR 87 WOODS HOLE          SPRING BOTTOM TRAWL
ARR: 20 MAR 87 WOODS HOLE            87-02                          19 DAY(S)
AREA INDEX: NA6

DEP: 23 MAR 87 WOODS HOLE          SPRING BOTTOM TRAWL
ARR: 03 APR 87 WOODS HOLE            87-02                          12 DAY(S)
AREA INDEX: NA6

DEP: 06 APR 87 WOODS HOLE          SPRING BOTTOM TRAWL
ARR: 17 APR 87 WOODS HOLE            87-02                          12 DAY(S)
AREA INDEX: NA6

DEP: 20 APR 87 WOODS HOLE          SPRING BOTTOM TRAWL
ARR: 01 MAY 87 WOODS HOLE            87-02                          12 DAY(S)
AREA INDEX: NA6

DEP: 04 MAY 87 WOODS HOLE          CURRENT METER DEPLOYMENT
ARR: 08 MAY 87 WOODS HOLE            87-03                           5 DAY(S)
AREA INDEX: NA6

DEP: 12 MAY 87 WOODS HOLE          ENVIRONMENTAL MONITORING
ARR: 22 MAY 87 WOODS HOLE            87-04                          11 DAY(S)
AREA INDEX: NA6

DEP: 01 JUN 87 WOODS HOLE          JUVENILE FISH
ARR: 19 JUN 87 WOODS HOLE            87-05                          19 DAY(S)
AREA INDEX: NA6
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DEP: 22 JUN 87 WOODS HOLE          JUVENILE FISH
ARR: 02 JUL 87 WOODS HOLE            87-06                         11 DAY(S)
AREA INDEX: NA6

DEP: 06 JUL 87 WOODS HOLE          SCALLOP
ARR: 17 JUL 87 WOODS HOLE            87-07                         12 DAY(S)
AREA INDEX: NA6

DEP: 20 JUL 87 WOODS HOLE          SCALLOP
ARR: 31 JUL 87 WOODS HOLE            87-07                         12 DAY(S)
AREA INDEX: NA6

DEP: 03 AUG 87 WOODS HOLE          SCALLOP
ARR: 13 AUG 87 WOODS HOLE            87-07                         11 DAY(S)
AREA INDEX: NA6

DEP: 17 AUG 87 WOODS HOLE          12-MILE DUMP SITE
ARR: 27 AUG 87 WOODS HOLE            87-08                         11 DAY(S)
AREA INDEX: NA6

DEP: 07 SEP 87 WOODS HOLE          AUTUMN BOTTOM TRAWL
ARR: 25 SEP 87 WOODS HOLE            87-09                         19 DAY(S)
AREA INDEX: NA6

DEP: 28 SEP 87 WOODS HOLE          AUTUMN BOTTOM TRAWL
ARR: 30 SEP 87 WOODS HOLE            87-09                          3 DAY(S)
AREA INDEX: NA6
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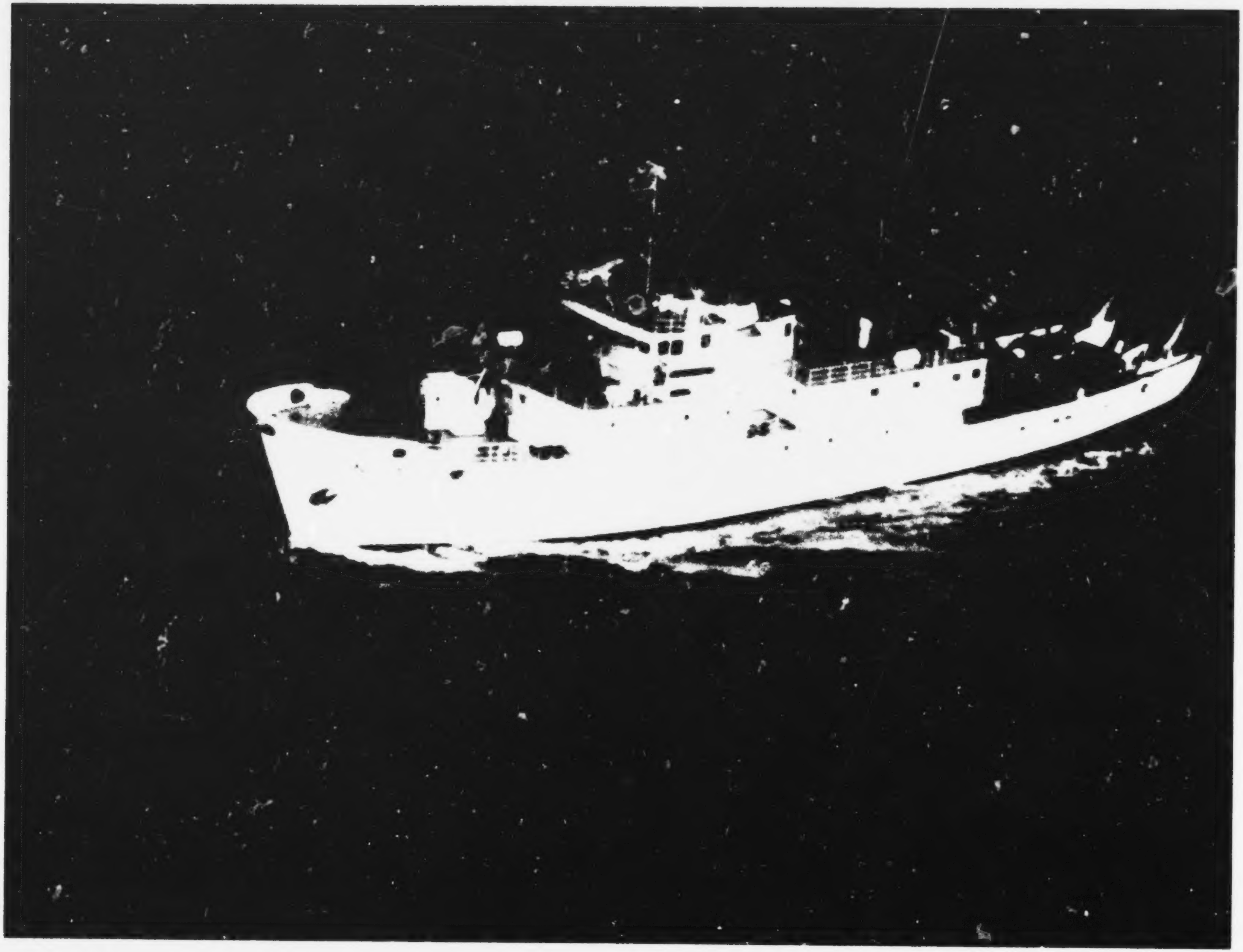

NOAA SHIP ALBATROSS IV

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                    CHAPMAN
   NAME:                         CDR. R C ARNOLD
   OFFICE:                       CHIEF MARINE SERVICES DIVISION
   ORGANIZATION:                 NOAA ATLANTIC MARINE CENTER
   ADDRESS:                      439 WEST YORK STREET
   CITY-STATE:                   NORFOLK VA  23510
   FTS PREFIX:                   827
   COMMERCIAL AREA CODE:         804
   PHONE:                        441-6440


     SHIP DIMENSIONS

   LENGTH:               127.0 FEET
   MAX BEAM:              29.6 FEET
   DISPLACEMENT:           520 TONS
   DRAUGHT:               14.0 FEET
   CRUISE SPEED:          11.0 KNOTS
   RANGE:                 6000 NAUTICAL MILES

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                 CHAPMAN                    LAST CHANGED 04 FEB 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87
               .......................................
ERL/NMFS                                                      NOAA

DEP: 09 FEB 87 PASCAGOULA         FLEET INSPECTION
ARR: 11 FEB 87 PASCAGOULA                                        3 DAY(S)
AREA INDEX: NA6

DEP: 12 FEB 87 PASCAGOULA         SQUID SURVEY
ARR: 24 FEB 87 KEY WEST             CH-87-01                    13 DAY(S)
AREA INDEX: NA6   NA9

DEP: 26 FEB 87 KEY WEST           SQUID SURVEY
ARR: 09 MAR 87 PASCAGOULA           CH-87-01                    12 DAY(S)
AREA INDEX: NA9   NA6

DEP: 07 APR 87 PASCAGOULA         BUTTERFISH SURVEY
ARR: 24 APR 87 PASCAGOULA           CH-87-02                    18 DAY(S)
AREA INDEX: NA6

DEP: 27 APR 87 PASCAGOULA         BUTTERFISH SURVEY
ARR: 13 MAY 87 PASCAGOULA           CH-87-02                    17 DAY(S)
AREA INDEX: NA6

DEP: 28 MAY 87 PASCAGOULA         DEMERSAL FISH SURVEY
ARR: 13 JUN 87 PASCAGOULA           CH-87-03                    17 DAY(S)
AREA INDEX: NA6

DEP: 15 JUN 87 PASCAGOULA         DEMERSAL FISH SURVEY
ARR: 02 JUL 87 PASCAGOULA           CH-87-03                    18 DAY(S)
AREA INDEX: NA6

DEP: 20 JUL 87 PASCAGOULA         FISHERIES TRNG CRUISE
ARR: 24 JUL 87 PASCAGOULA                                        5 DAY(S)
AREA INDEX: NA6

DEP: 30 JUL 87 PASCAGOULA         LATENT RESOURCES SURVEY
ARR: 11 AUG 87 PASCAGOULA           CH-87-04                    13 DAY(S)
AREA INDEX: NA6
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DEP: 13 AUG 87 PASCAGOULA          LATENT RESOURCES SURVEY
ARR: 24 AUG 87 PASCAGOULA            CH-87-04                      12 DAY(S)
AREA INDEX: NA6

DEP: 04 SEP 87 PASCAGOULA          REEF FISH SURVEY
ARR: 15 SEP 87 PASCAGOULA            CH-87-05                      12 DAY(S)
AREA INDEX: NA6

DEP: 17 SEP 87 PASCAGOULA          REEF FISH SURVEY
ARR: 29 SEP 87 PASCAGOULA            CH-87-05                      13 DAY(S)
AREA INDEX: NA6
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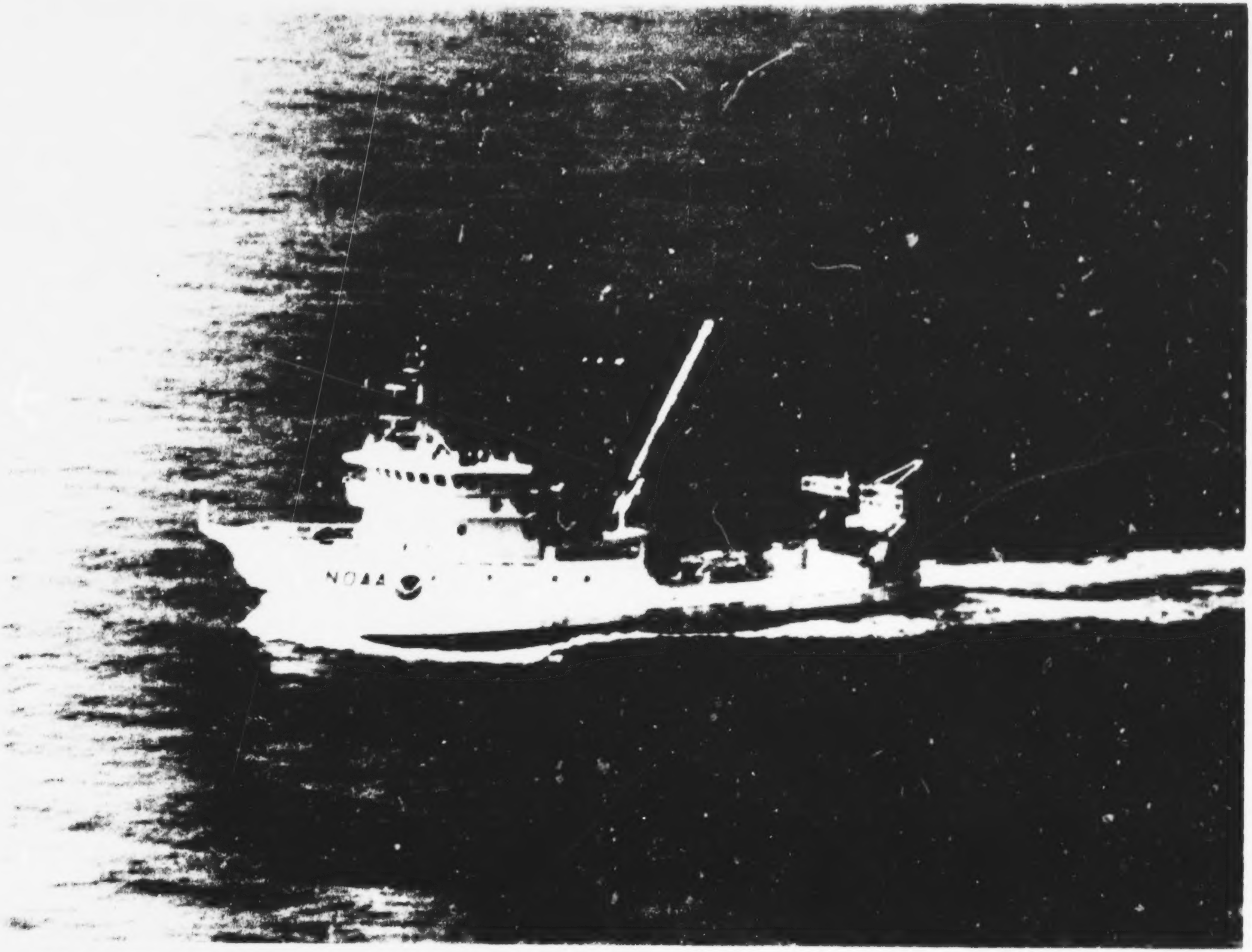

NOAA SHIP CHAPMAN

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                JOHN N COBB
   NAME:                     CAPT. W. F. FORSTER
   OFFICE:                   CHIEF OPERATIONS DIVISION
   ORGANIZATION:             NOAA PACIFIC MARINE CENTER
   ADDRESS:                  1801 FAIRVIEW AVENUE E
   CITY-STATE:               SEATTLE WA  98102
   FTS PREFIX:               206
   COMMERCIAL AREA CODE:     206
   PHONE:                    442-4548


     SHIP DIMENSIONS

   LENGTH:             93.0 FEET
   MAX BEAM:           26.0 FEET
   DISPLACEMENT:        250 TONS
   DRAUGHT:            11.0 FEET
   CRUISE SPEED:        9.3 KNOTS
   RANGE:              2900 NAUTICAL MILES

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                JOHN N COBB                LAST CHANGED 21 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

NMFS                                                     NOAA

DEP: 02 FEB 87 SEATTLE               NMFS AUKE BAY GEAR TEST
ARR: 06 FEB 87 SEATTLE                 JC8701                     5 DAY(S)
AREA INDEX: NP9

DEP: 19 FEB 87 SEATTLE               NMFS AUKE BAY SABLEFISH
ARR: 22 FEB 87 JUNEAU                  JC8702                     4 DAY(S)
AREA INDEX: NP9    NP6

DEP: 23 FEB 87 JUNEAU                NMFS AUKE BAY SABLEFISH
ARR: 18 MAR 87 JUNEAU                  JC8702                    24 DAY(S)
AREA INDEX: NP6

DEP: 21 MAR 87 JUNEAU                NMFS NMML DALL PORPOISE
ARR: 09 APR 87 SEATTLE                 JC8703                    20 DAY(S)
AREA INDEX: NP6    NP9

DEP: 11 APR 87 CORDOVA               NMFS NMML TRANSIT
ARR: 08 APR 87 SEATTLE                 JC8702                     2 DAY(S)
AREA INDEX: NP6    NP9

DEP: 04 MAY 87 SEATTLE               NMFS AUKE BAY SABLEFISH TEST
ARR: 07 MAY 87 JUNEAU                  JC8703 I                   4 DAY(S)
AREA INDEX: NP9    NP6

DEP: 07 MAY 87 SEATTLE               NMFS AUKE BAY SABLEFISH TEST
ARR: 10 MAY 87 JUNEAU                  JC8704                     4 DAY(S)
AREA INDEX: NP9    NP6

DEP: 11 MAY 87 JUNEAU                NMFS AUKE BAY SABLEFISH TEST
ARR: 04 JUN 87 JUNEAU                  JC8704 I                  25 DAY(S)
AREA INDEX: NP6

DEP: 05 JUN 87 JUNEAU                NMFS AUKE BAY SABLEFISH TRAPS
ARR: 02 JUL 87 JUNEAU                  JC8704 II                 28 DAY(S)
AREA INDEX: NP6
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DEP: 06 JUL 87 JUNEAU                  NMFS AUKE BAY HYDROACOUSTICS
ARR: 04 AUG 87 JUNEAU                    JC8704 III                        30 DAY(S)
AREA INDEX: NP6

DEP: 05 AUG 87 JUNEAU                  NMFS AUKE BAY TRANSIT
ARR: 13 AUG 87 SEATTLE                   JC8704 TR                          9 DAY(S)
AREA INDEX: NP6    NP9
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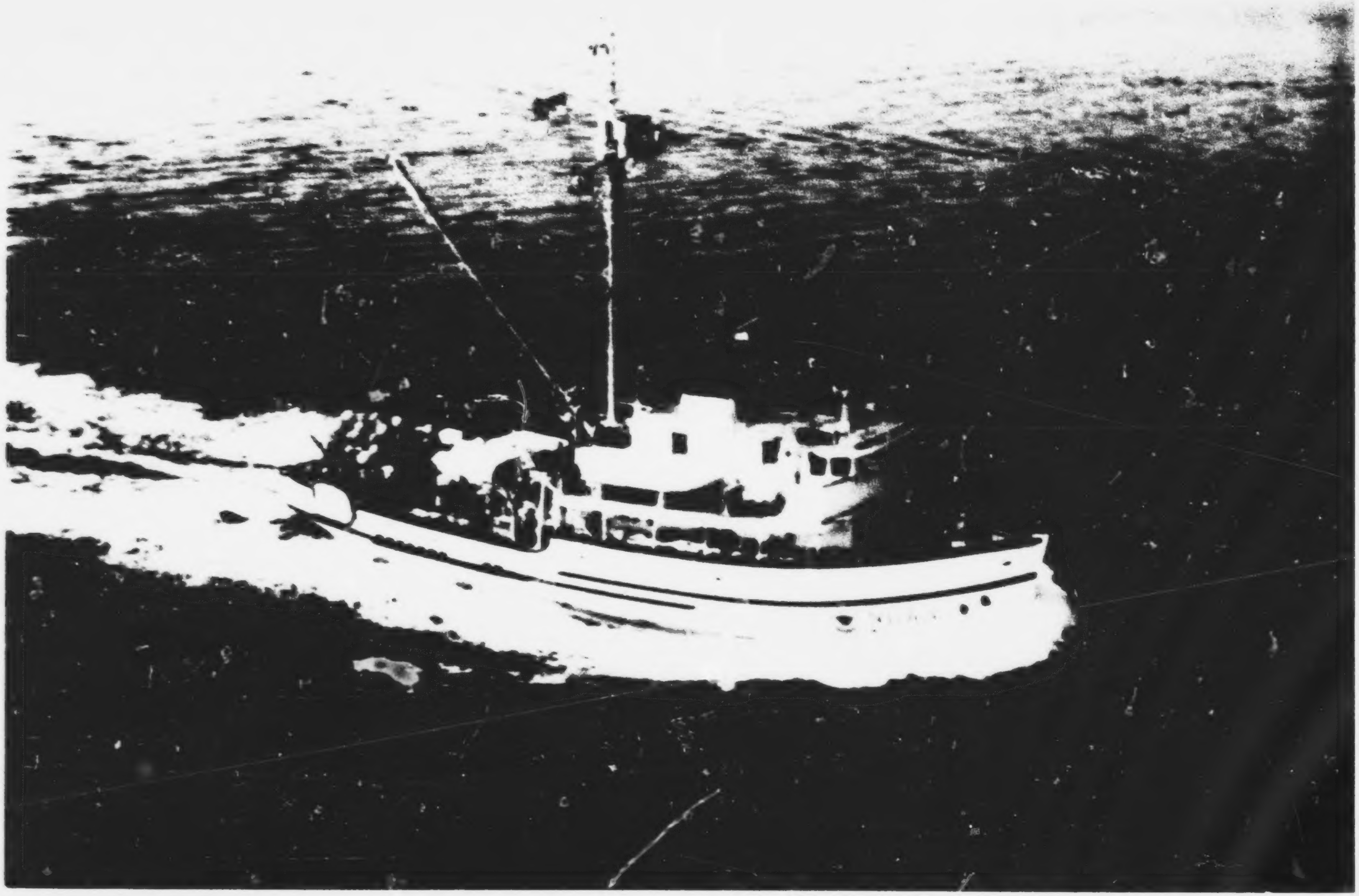

NOAA SHIP JOHN N. COBB

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  TOWNSEND CROMWELL
    NAME:                       CAPT. W. F. FORSTER
    OFFICE:                     CHIEF OPERATIONS DIVISION
    ORGANIZATION:               NOAA PACIFIC MARINE CENTER
    ADDRESS:                    1801 FAIRVIEW AVENUE E
    CITY-STATE:                 SEATTLE WA  98102
    FTS PREFIX:                 206
    COMMERCIAL AREA CODE:       206
    PHONE:                      442-4548


      SHIP DIMENSIONS

    LENGTH:              163.0 FEET
    MAX BEAM:             33.0 FEET
    DISPLACEMENT:          652 TONS
    DRAUGHT:              12.7 FEET
    CRUISE SPEED:         11.5 KNOTS
    RANGE:                8300 NAUTICAL MILES

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                 TOWNSEND CROMWELL         LAST CHANGED 01 DEC 86

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

            ..........................................
NMFS                                                      NOAA

DEP: 02 JAN 87 HONOLULU  HI        SWFC HL ALBACORE S.PAC. I
ARR: 12 JAN 87 PAPEETE TAHITI        TC8701(123)                   11 DAY(S)
AREA INDEX: NP12  SP2

DEP: 15 JAN 87 PAPEETE TAHITI      SWFC HL ALBACORE S. PAC
ARR: 16 FEB 87 RAROTONGA             TC8701(123)                   33 DAY(S)
AREA INDEX: SP2

DEP: 19 FEB 87 RAROTONGA           SWFC HL ALBACORE S.PAC. II
ARR: 21 FEB 87 ALOFI, NIUE           TC8701(123)                    3 DAY(S)
AREA INDEX: SP2

DEP: 22 FEB 87 ALOFI, NIUE         SWFC HL ALBACORE S. PAC
ARR: 25 FEB 87 ALOFI, NIUE           TC8701(123)                    4 DAY(S)
AREA INDEX: SP2

DEP: 26 FEB 87 ALOFI, NIUE         SWFC HL ALBACORE S.PAC
ARR: 27 FEB 87 PAGO PAGO             TC8701(123)                    2 DAY(S)
AREA INDEX: SP2   SP1

DEP: 28 FEB 87 PAGO PAGO           SWFC HL ALBACORE S. PAC
ARR: 03 MAR 87 PAGO PAGO             TC8701(123)                    4 DAY(S)
AREA INDEX: SP1

DEP: 05 MAR 87 PAGO PAGO           SWFC HL ALBACORE S.PAC III
ARR: 17 MAR 87 HONOLULU              TC8701(123)                   13 DAY(S)
AREA INDEX: SP1   NP12

DEP: 30 MAR 87 HONOLULU            SWFC HL SEA MT. I
ARR: 23 APR 87 MIDWAY IS             TC8702(124)                   25 DAY(S)
AREA INDEX: NP12  NP11

DEP: 25 APR 87 MIDWAY IS           SWFC HL SEA MT. II
ARR: 14 MAY 87 HONOLULU              TC8702(124)                   20 DAY(S)
AREA INDEX: NP11  NP12
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DEP:  25 JUN 87 HONOLULU            SWFC HL LOBSTER I
ARR:  30 JUL 87 HONOLULU, HI          TC8703(125)                 36 DAY(S)
AREA INDEX:  NP12

DEP:  06 AUG 87 HONOLULU            SWFC HL SHRIMP & REEF STUDY
ARR:  30 SEP 87 HONOLULU              TC8704(126)                 56 DAY(S)
AREA INDEX:  NP12
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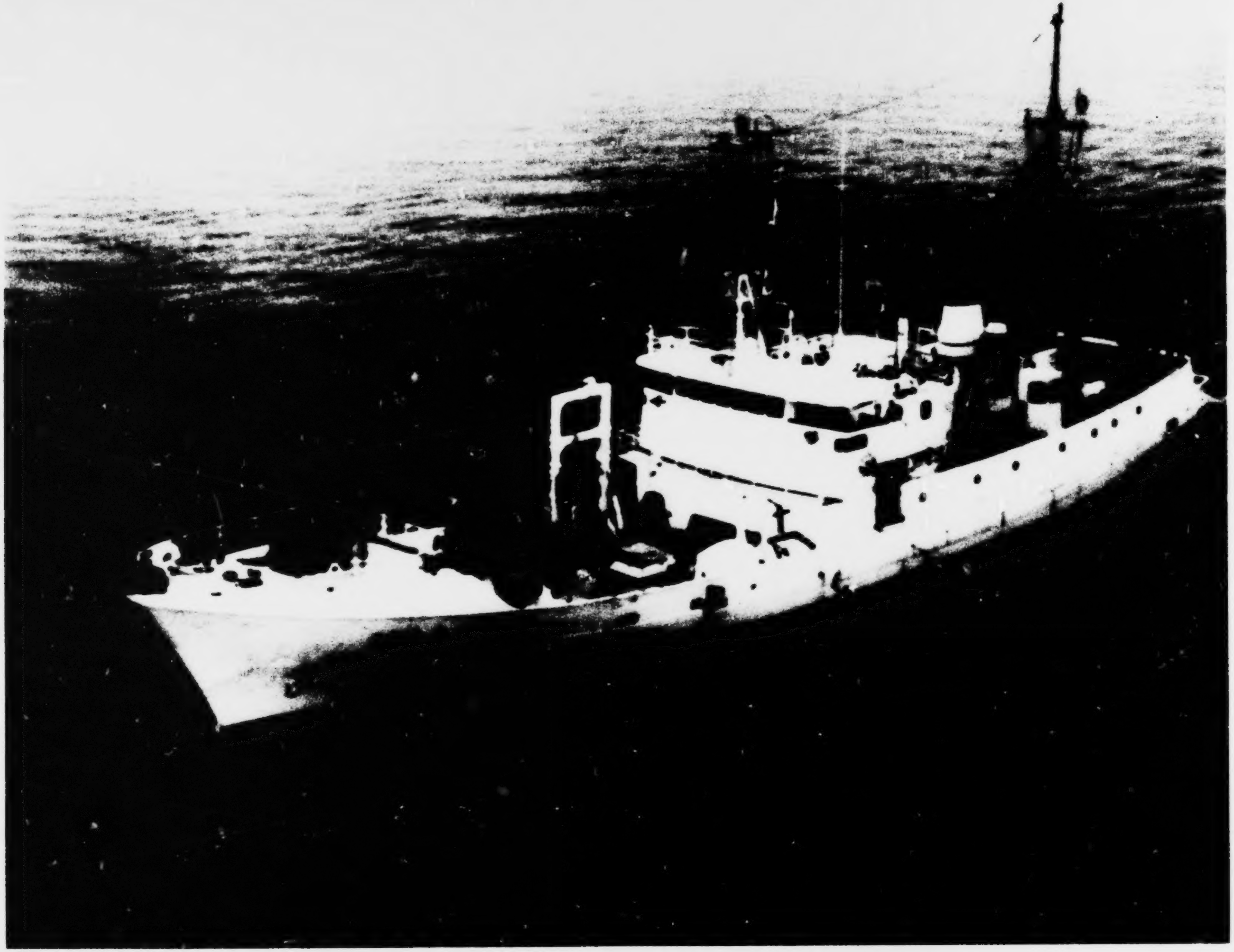

NOAA SHIP TOWNSEND CROMWELL

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                   DAVIDSON
   NAME:                        CAPT. W. F. FORSTER
   OFFICE:                      CHIEF OPERATIONS DIVISION
   ORGANIZATION:                NOAA PACIFIC MARINE CENTER
   ADDRESS:                     1801 FAIRVIEW AVENUE E
   CITY-STATE:                  SEATTLE WA  98102
   FTS PREFIX:                  206
   COMMERCIAL AREA CODE:        206
   PHONE:                       442-4548


     SHIP DIMENSIONS

   LENGTH:            175.0 FEET
   MAX BEAM:           38.0 FEET
   DISPLACEMENT:        995 TONS
   DRAUGHT:            13.3 FEET
   CRUISE SPEED:       12.0 KNOTS
   RANGE:              6000 NAUTICAL MILES

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                 DAVIDSON                  LAST CHANGED 05 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

             .........................................
NOS                                                  NOAA

DEP: 31 MAR 87 SEATTLE            EEZ SURVEY OREGON
ARR: 09 APR 87 NEWPORT, ORE                                  10 DAY(S)
AREA INDEX: NP9

DEP: 14 APR 87 NEWPORT, ORE       EEZ SURVEY OREGON
ARR: 24 APR 87 NEWPORT, ORE                                  11 DAY(S)
AREA INDEX: NP9

DEP: 28 APR 87 NEWPORT, ORE       EEZ SURVEY OREGON
ARR: 08 MAY 87 NEWPORT, ORE                                  11 DAY(S)
AREA INDEX: NP9

DEP: 12 MAY 87 NEWPORT, ORE       EEZ SURVEYS WASHINGTON
ARR: 22 MAY 87 PORT ANGELES                                  11 DAY(S)
AREA INDEX: NP9

DEP: 27 MAY 87 PORT ANGELES       EEZ SURVEYS WASHINGTON
ARR: 05 JUN 87 PORT ANGELES                                  10 DAY(S)
AREA INDEX: NP9

DEP: 09 JUN 87 PORT ANGELES       EEZ SURVEYS WASHINGTON
ARR: 18 JUN 87 PORT ANGELES                                  10 DAY(S)
AREA INDEX: NP9

DEP: 22 JUN 87 PORT ANGELES       EEZ SURVEYS WASHINGTON
ARR: 02 JUL 87 PORT ANGELES                                  11 DAY(S)
AREA INDEX: NP9

DEP: 07 JUL 87 PORT ANGELES       EEZ SURVEYS WASHINGTON
ARR: 17 JUL 87 PORT ANGELES                                  11 DAY(S)
AREA INDEX: NP9

DEP: 21 JUL 87 PORT ANGELES       EEZ SURVEYS WASHINGTON
ARR: 30 JUL 87 PORT ANGELES                                  10 DAY(S)
AREA INDEX: NP9
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DEP: 03 AUG 87 PORT ANGELES         EEZ SURVEYS WASHINGTON
ARR: 14 AUG 87 SEATTLE                                              12 DAY(S)
AREA INDEX: NP9

DEP: 25 AUG 87 SEATTLE              MEQ
ARR: 03 SEP 87 SEATTLE                                              10 DAY(S)
AREA INDEX: NP9

DEP: 08 SEP 87 SEATTLE              MEQ
ARR: 17 SEP 87 SEATTLE                                              10 DAY(S)
AREA INDEX: NP9

DEP: 21 SEP 87 SEATTLE              MEQ
ARR: 30 SEP 87 SEATTLE                                              10 DAY(S)
AREA INDEX: NP9
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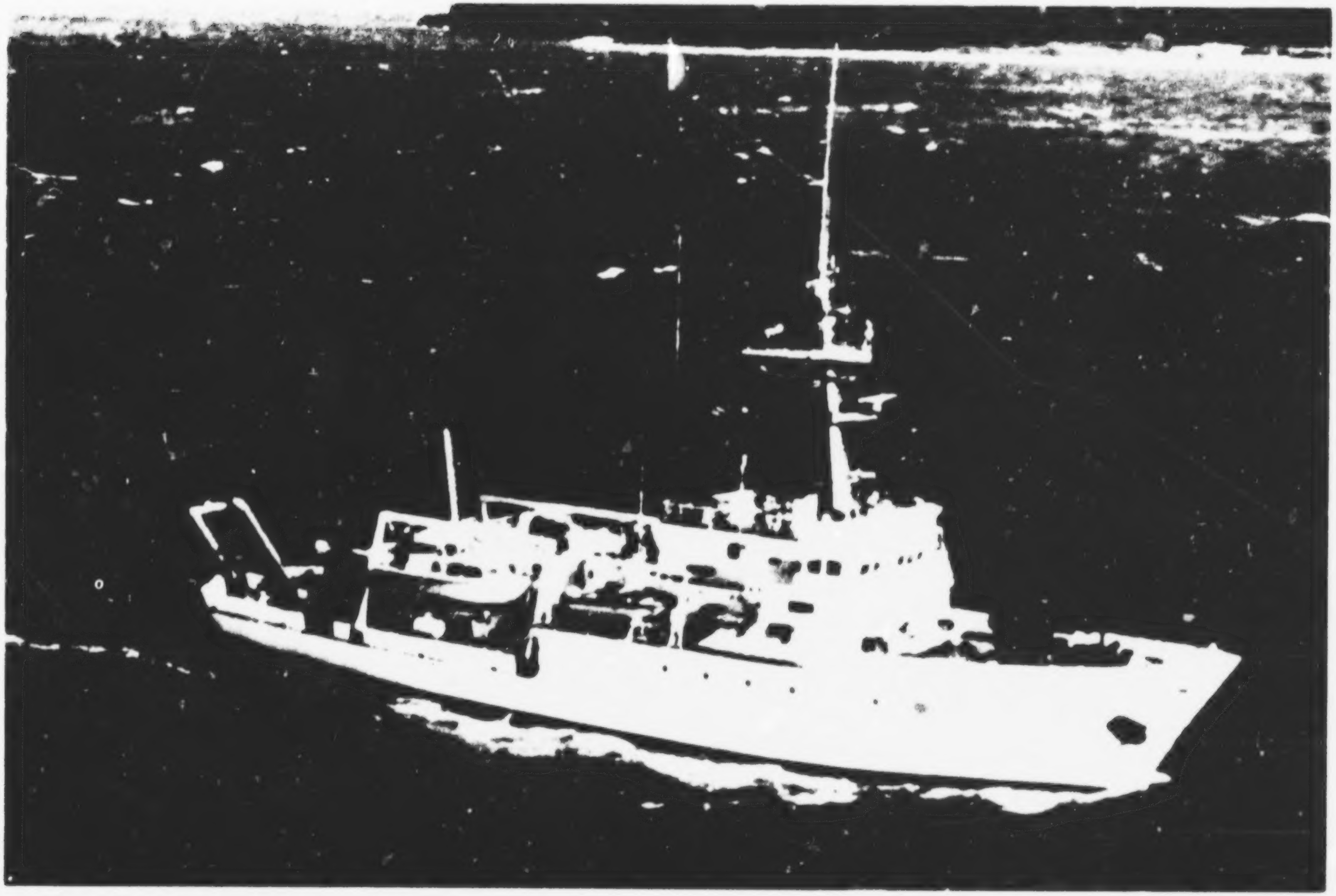

NOAA SHIP DAVIDSON

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  DELAWARE II
    NAME:                       CDR. R C ARNOLD
    OFFICE:                     CHIEF MARINE SERVICES DIVISION
    ORGANIZATION:               NOAA ATLANTIC MARINE CENTER
    ADDRESS:                    439 WEST YORK STREET
    CITY-STATE:                 NORFOLK VA 23510
    FTS PREFIX:                 827
    COMMERCIAL AREA CODE:       804
    PHONE:                      441-6440


      SHIP DIMENSIONS

    LENGTH:             155.0 FEET
    MAX BEAM:            30.1 FEET
    DISPLACEMENT:         758 TONS
    DRAUGHT:             14.7 FEET
    CRUISE SPEED:        11.5 KNOTS
    RANGE:               6600 NAUTICAL MILES

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                  DELAWARE II               LAST CHANGED 16 JAN 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

            .......................................
NMFS                                                     NOAA

DEP: 05 JAN 87 WOODS HOLE            MARMAP I
ARR: 16 JAN 87 WOODS HOLE             87-01                        12 DAY(S)
AREA INDEX: NA6

DEP: 19 JAN 87 WOODS HOLE            MARMAP I
ARR: 30 JAN 87 WOODS HOLE             87-01                        12 DAY(S)
AREA INDEX: NA6

DEP: 02 FEB 87 WOODS HOLE            MARMAP I
ARR: 12 FEB 87 WOODS HOLE             87-01                        11 DAY(S)
AREA INDEX: NA6

DEP: 17 FEB 87 WOODS HOLE            FISHING POWER
ARR: 27 FEB 87 WOODS HOLE             87-02                        11 DAY(S)
AREA INDEX: NA6

DEP: 07 APR 87 WOODS HOLE            FISHING POWER
ARR: 17 APR 87 WOODS HOLE             87-03                        11 DAY(S)
AREA INDEX: NA6

DEP: 20 APR 87 WOODS HOLE            FISHING POWER
ARR: 29 APR 87 WOODS HOLE             87-03                        10 DAY(S)
AREA INDEX: NA6

DEP: 04 MAY 87 WOODS HOLE            MARMAP I
ARR: 22 MAY 87 WOODS HOLE             87-04                        19 DAY(S)
AREA INDEX: NA6

DEP: 26 MAY 87 WOODS HOLE            MARMAP I
ARR: 05 JUN 87 WOODS HOLE             87-04                        11 DAY(S)
AREA INDEX: NA6

DEP: 15 JUN 87 WOODS HOLE            JUVENILE FISH
ARR: 02 JUL 87 WOODS HOLE             87-05                        18 DAY(S)
AREA INDEX: NA6
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DEP: 06 JUL 87 WOODS HOLE
ARR: 23 JUL 87 WOODS HOLE          ENVIRONMENTAL MONITORING
AREA INDEX: NA6                       87-06
                                                                  18 DAY(S)
DEP: 28 JUL 87 WOODS HOLE
ARR: 13 AUG 87 WOODS HOLE          JUVENILE FISH
AREA INDEX: NA6                       87-07
                                                                  17 DAY(S)
DEP: 17 AUG 87 WOODS HOLE
ARR: 28 AUG 87 WOODS HOLE          MARMAP I
AREA INDEX: NA6                       87-08
                                                                  12 DAY(S)
DEP: 02 SEP 87 WOODS HOLE
ARR: 11 SEP 87 WOODS HOLE          MARMAP I
AREA INDEX: NA6                       87-08
                                                                  10 DAY(S)
DEP: 14 SEP 87 WOODS HOLE
ARR: 25 SEP 87 WOODS HOLE          MARMAP I
AREA INDEX: NA6                       87-08
                                                                  12 DAY(S)
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NOAA SHIP DELAWARE II

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                DISCOVERER
    NAME:                     CAPT. W. F. FORSTER
    OFFICE:                   CHIEF OPERATIONS DIVISION
    ORGANIZATION:             NOAA PACIFIC MARINE CENTER
    ADDRESS:                  1801 FAIRVIEW AVENUE E
    CITY-STATE:               SEATTLE WA 98102
    FTS PREFIX:               206
    COMMERCIAL AREA CODE:     206
    PHONE:                    442-4548


      SHIP DIMENSIONS

    LENGTH:            303.0 FEET
    MAX BEAM:           52.0 FEET
    DISPLACEMENT:       4033 TONS
    DRAUGHT:            19.8 FEET
    CRUISE SPEED:       15.0 KNOTS
    RANGE:             12250 NAUTICAL MILES

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                 DISCOVERER                 LAST CHANGED 05 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

          ..........................................
ERL                                                          NOAA

DEP: 16 APR 87 SEATTLE          WA EEZ
ARR: 01 MAY 87 ASTORIA                                                16 DAY(S)
AREA INDEX: NP9

DEP: 05 MAY 87 ASTORIA          WA EEZ
ARR: 21 MAY 87 ASTORIA                                                17 DAY(S)
AREA INDEX: NP9

DEP: 27 MAY 87 ASTORIA          WA EEZ
ARR: 11 JUN 87 ASTORIA                                                16 DAY(S)
AREA INDEX: NP9

DEP: 16 JUN 87 ASTORIA          WA EEZ
ARR: 26 JUN 87 SEATTLE PMC                                            11 DAY(S)
AREA INDEX: NP9
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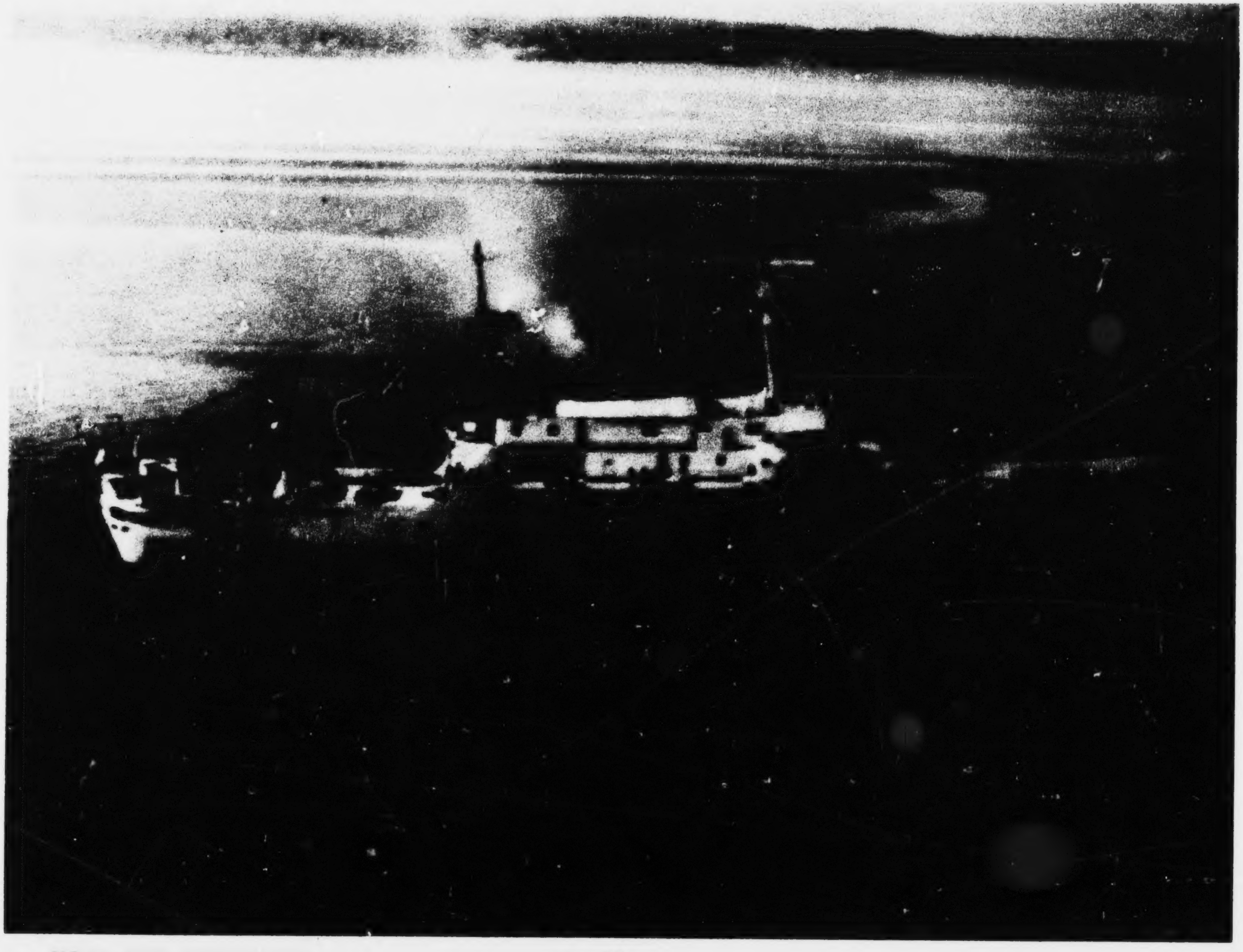

NOAA SHIP DISCOVERER

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***********************************************************
      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                FAIRWEATHER
    NAME:                     CAPT. W. F. FORSTER
    OFFICE:                   CHIEF OPERATIONS DIVISION
    ORGANIZATION:             NOAA PACIFIC MARINE CENTER
    ADDRESS:                  1801 FAIRVIEW AVENUE E
    CITY-STATE:               SEATTLE WA  98102
    FTS PREFIX:               206
    COMMERCIAL AREA CODE:     206
    PHONE:                    442-4548


      SHIP DIMENSIONS

    LENGTH:            231.0 FEET
    MAX BEAM:           42.0 FEET
    DISPLACEMENT:       1800 TONS
    DRAUGHT:            14.3 FEET
    CRUISE SPEED:       13.0 KNOTS
    RANGE:              7000 NAUTICAL MILES

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                   FAIRWEATHER              LAST CHANGED 21 JAN 87

                  OPS SCHEDULE FOR PERIOD
                  01 JAN 87 THRU 31 DEC 87

      ........................................
NOS                                                      NOAA

DEP: 25 MAR 87 SEATTLE           HYDRO SURVEY CHATHAM STRAIT
ARR: 10 APR 87 JUNEAU              OPR-0322                      17 DAY(S)
AREA INDEX: NP9   NP6

DEP: 14 APR 87 JUNEAU            HYDRO SURVEY CHATHAM STRAIT
ARR: 24 APR 87 JUNEAU              OPR-0322                      11 DAY(S)
AREA INDEX: NP6

DEP: 27 APR 87 JUNEAU            HYDRO SURVEY CHATHAM STRAIT
ARR: 08 MAY 87 JUNEAU              OPR-0322                      12 DAY(S)
AREA INDEX: NP6

DEP: 11 MAY 87 JUNEAU            HYDRO SURVEY S. AK PENINSULA
ARR: 21 MAY 87 KODIAK              OPR-P180                      11 DAY(S)
AREA INDEX: NP6

DEP: 26 MAY 87 KODIAK            HYDRO SURVEY S. AK PENINSULA
ARR: 05 JUN 87 KODIAK              OPR-P180                      11 DAY(S)
AREA INDEX: NP6

DEP: 09 JUN 87 KODIAK            HYDRO SURVEY S. AK PENINSULA
ARR: 19 JUN 87 HOMER               OPR-P180                      11 DAY(S)
AREA INDEX: NP6

DEP: 22 JUN 87 HOMER             HYDRO SURVEY S. AK PENINSULA
ARR: 02 JUL 87 KODIAK              OPR-P180                      11 DAY(S)
AREA INDEX: NP6

DEP: 07 JUL 87 KODIAK            HYDRO SURVEY S. AK PENINSULA
ARR: 17 JUL 87 KODIAK              OPR-P180                      11 DAY(S)
AREA INDEX: NP6

DEP: 21 JUL 87 KODIAK            HYDRO SURVEY S. AK PENINSULA
ARR: 31 JUL 87 HOMER               OPR-P180                      11 DAY(S)
AREA INDEX: NP6
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DEP: 03 AUG 87 HOMER              HYDRO SURVEY S. AK PENINSULA
ARR: 14 AUG 87 KODIAK              OPR-P180                      12 DAY(S)
AREA INDEX: NP6

DEP: 18 AUG 87 KODIAK             HYDRO SURVEY S. AK PENINSULA
ARR: 28 AUG 87 KODIAK              OPR-P180                      11 DAY(S)
AREA INDEX: NP6

DEP: 01 SEP 87 KODIAK             HYDRO SURVEY S. AK PENINSULA
ARR: 11 SEP 87 SEATTLE             OPR-P180                      11 DAY(S)
AREA INDEX: NP6    NP9
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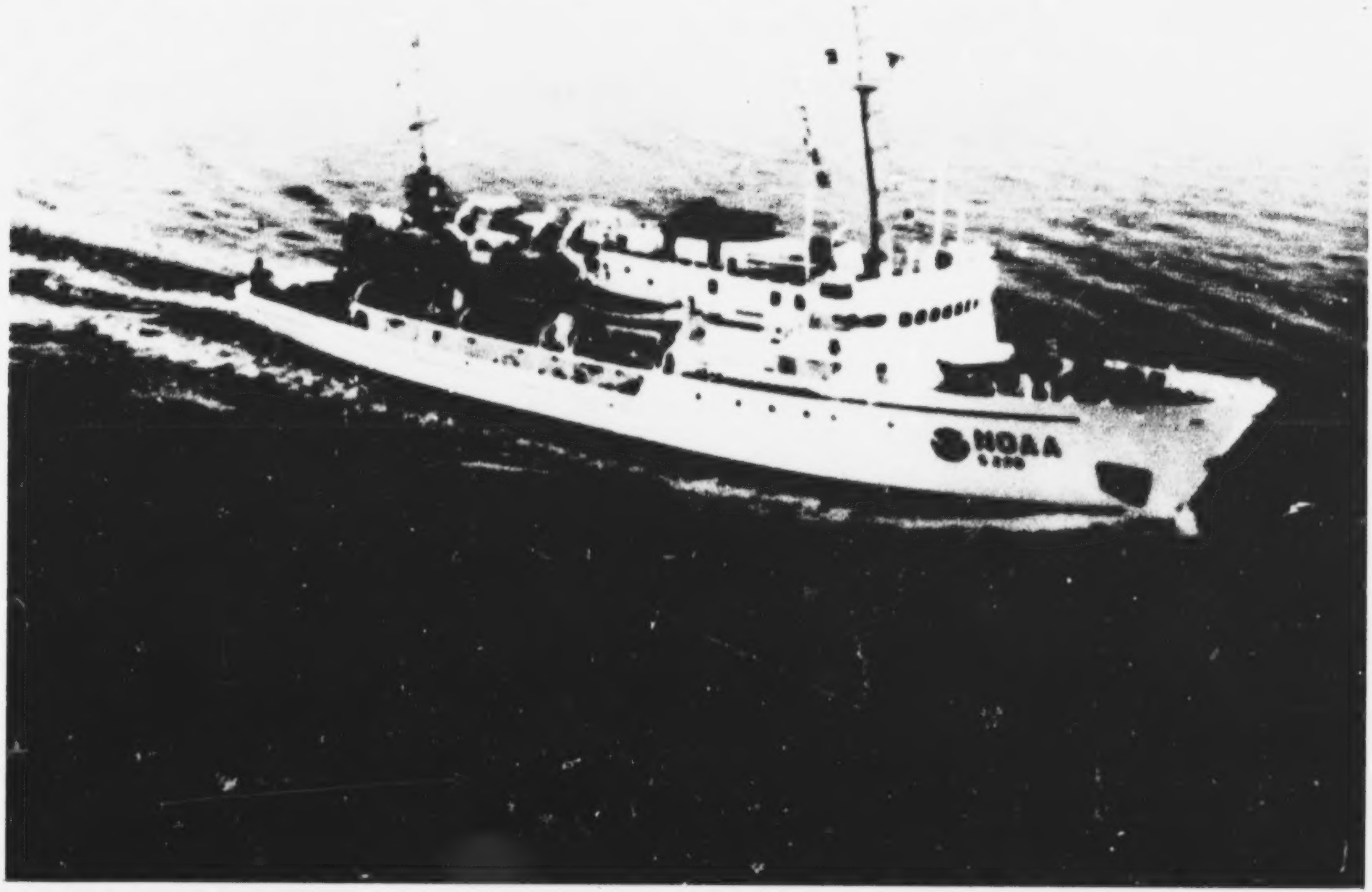

NOAA SHIP FAIRWEATHER

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  FERREL
    NAME:                       CDR. R C ARNOLD
    OFFICE:                     CHIEF MARINE SERVICES DIVISION
    ORGANIZATION:               NOAA ATLANTIC MARINE CENTER
    ADDRESS:                    439 WEST YORK STREET
    CITY-STATE:                 NORFORK VA  23510
    FTS PREFIX:                 827
    COMMERCIAL AREA CODE:       804
    PHONE:                      441-6440


      SHIP DIMENSIONS

    LENGTH:             133.0 FEET
    MAX BEAM:            32.0 FEET
    DISPLACEMENT:         360 TONS
    DRAUGHT:              8.0 FEET
    CRUISE SPEED:        10.0 KNOTS
    RANGE:               2200 NAUTICAL MILES

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                FERREL                     LAST CHANGED 16 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

        ...........................................
NOS                                                    NOAA

DEP: 23 FEB 87 NORFOLK               VA SEA GRANT
ARR: 28 FEB 87 NORFOLK                                          6 DAY(S)
AREA INDEX: NA6

DEP: 02 MAR 87 NORFOLK               VA SEA GRANT
ARR: 06 MAR 87 NORFOLK                                          5 DAY(S)
AREA INDEX: NA6

DEP: 16 MAR 87 NORFOLK               STATUS & TRENDS - EAST COAST
ARR: 15 MAY 87 NORFOLK                                         61 DAY(S)
AREA INDEX: NA6

DEP: 26 JUN 87 NORFOLK               VA SEA GRANT
ARR: 30 JUN 87 NORFOLK                                          5 DAY(S)
AREA INDEX: NA6

DEP: 06 JUL 87 NORFOLK               STATUS & TRENDS
ARR: 31 JUL 87 NORFOLK                                         26 DAY(S)
AREA INDEX: NA6

DEP: 03 AUG 87 NORFOLK               VA SEA GRANT
ARR: 14 AUG 87 NORFOLK                                         12 DAY(S)
AREA INDEX: NA6

DEP: 17 AUG 87 NORFOLK               STATUS & TRENDS
ARR: 30 SEP 87 ST PETERSBURG                                   45 DAY(S)
AREA INDEX: NA6   NA9
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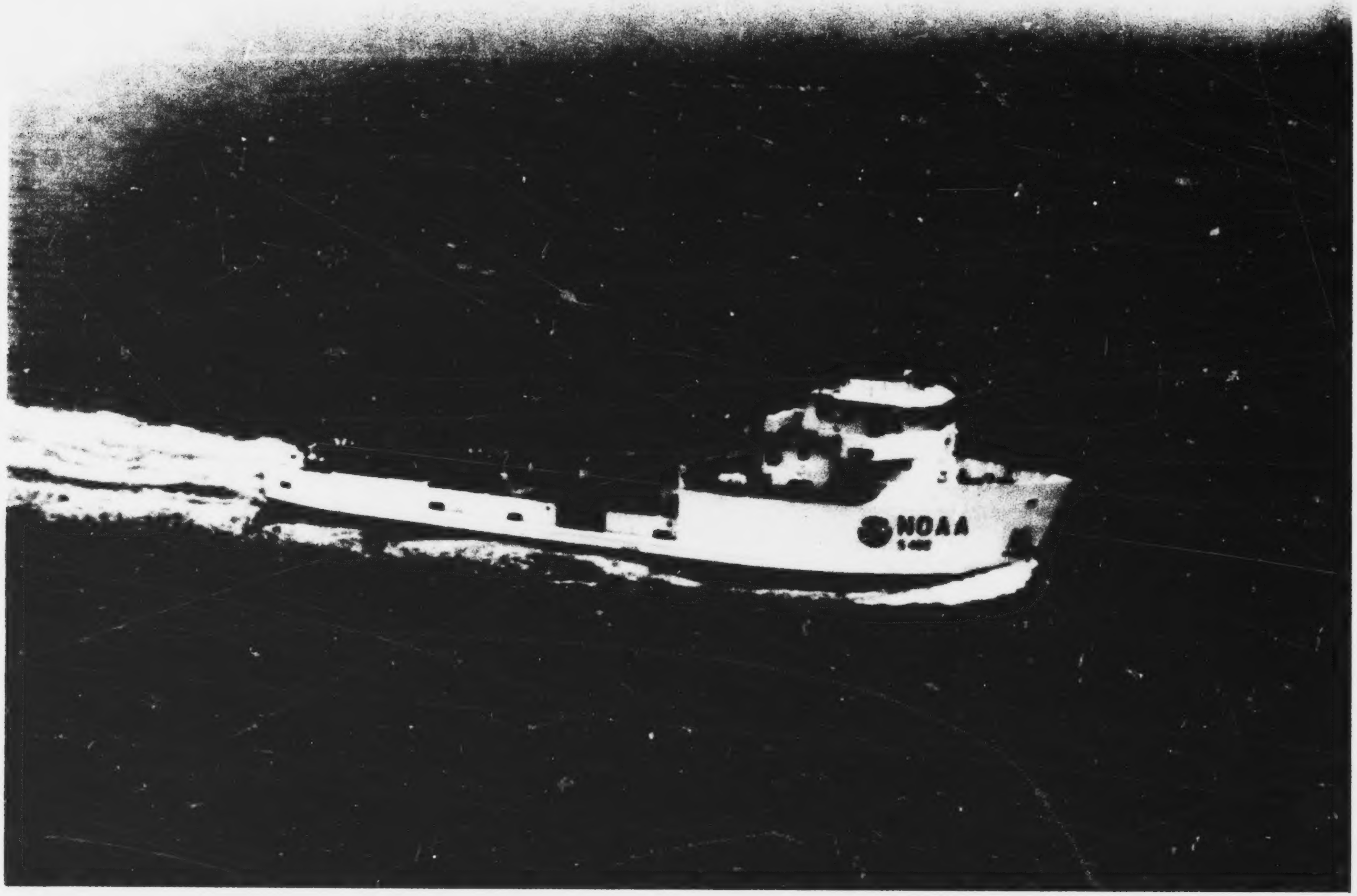

NOAA SHIP FERREL

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                 MILLER FREEMAN
   NAME:                      CAPT. W. F. FORSTER
   OFFICE:                    CHIEF OPERATIONS DIVISION
   ORGANIZATION:              NOAA PACIFIC MARINE CENTER
   ADDRESS:                   1801 FAIRVIEW AVENUE E
   CITY-STATE:                SEATTLE WA  98102
   FTS PREFIX:                206
   COMMERCIAL AREA CODE:      206
   PHONE:                     442-4548


     SHIP DIMENSIONS

   LENGTH:            215.0 FEET
   MAX BEAM:           42.0 FEET
   DISPLACEMENT:       1920 TONS
   DRAUGHT:            20.0 FEET
   CRUISE SPEED:       14.0 KNOTS
   RANGE:             13800 NAUTICAL MILES

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                   MILLER FREEMAN         LAST CHANGED 01 DEC 86

                  OPS SCHEDULE FOR PERIOD
                  01 JAN 87 THRU 31 DEC 87

           ......................................
ERL/NMFS                                                 NOAA

DEP: 06 JAN 87 SEATTLE              NMFS WA/OR EGGS & LARVAE
ARR: 02 FEB 87 SEATTLE                MF8701                       28 DAY(S)
AREA INDEX: NP9

DEP: 09 FEB 87 SEATTLE              OCSEAP BERING SEA
ARR: 09 MAR 87 KODIAK                 MF8702                       29 DAY(S)
AREA INDEX: NP9   NP6

DEP: 11 MAR 87 KODIAK               NMFS POLLOCK SURVEY
ARR: 31 MAR 87 KODIAK                 MF8703                       21 DAY(S)
AREA INDEX: NP6

DEP: 02 APR 87 KODIAK               NMFS FOX 87-1
ARR: 17 APR 87 KODIAK                 MF8704                       16 DAY(S)
AREA INDEX: NP6

DEP: 21 APR 87 KODIAK               OCSEAP BERING SEA
ARR: 14 MAY 87 KODIAK                 MF8705                       24 DAY(S)
AREA INDEX: NP6

DEP: 18 MAY 87 KODIAK               NMFS FOX 87-2
ARR: 29 MAY 87 KODIAK                 MF8706                       12 DAY(S)
AREA INDEX: NP6

DEP: 02 JUN 87 KODIAK               PMEL RIBS
ARR: 15 JUN 87 DUTCH HARBOR           MF8707                       14 DAY(S)
AREA INDEX: NP6   NP5   NP6

DEP: 17 JUN 87 DUTCH HARBOR         NMFS FOX 87-3
ARR: 04 JUL 87 KODIAK                 MF8708                       18 DAY(S)
AREA INDEX: NP5   NP6

DEP: 07 JUL 87 KODIAK               NMFS FOX 87-4
ARR: 21 JUL 87 SEATTLE                MF8709                       15 DAY(S)
AREA INDEX: NP6   NP9
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DEP: 08 SEP 87 SEATTLE                    OCSEAP S&T SE AK & BERING S
ARR: 30 SEP 87 AT SEA                       MF8710                          23 DAY(S)
AREA INDEX: NP9
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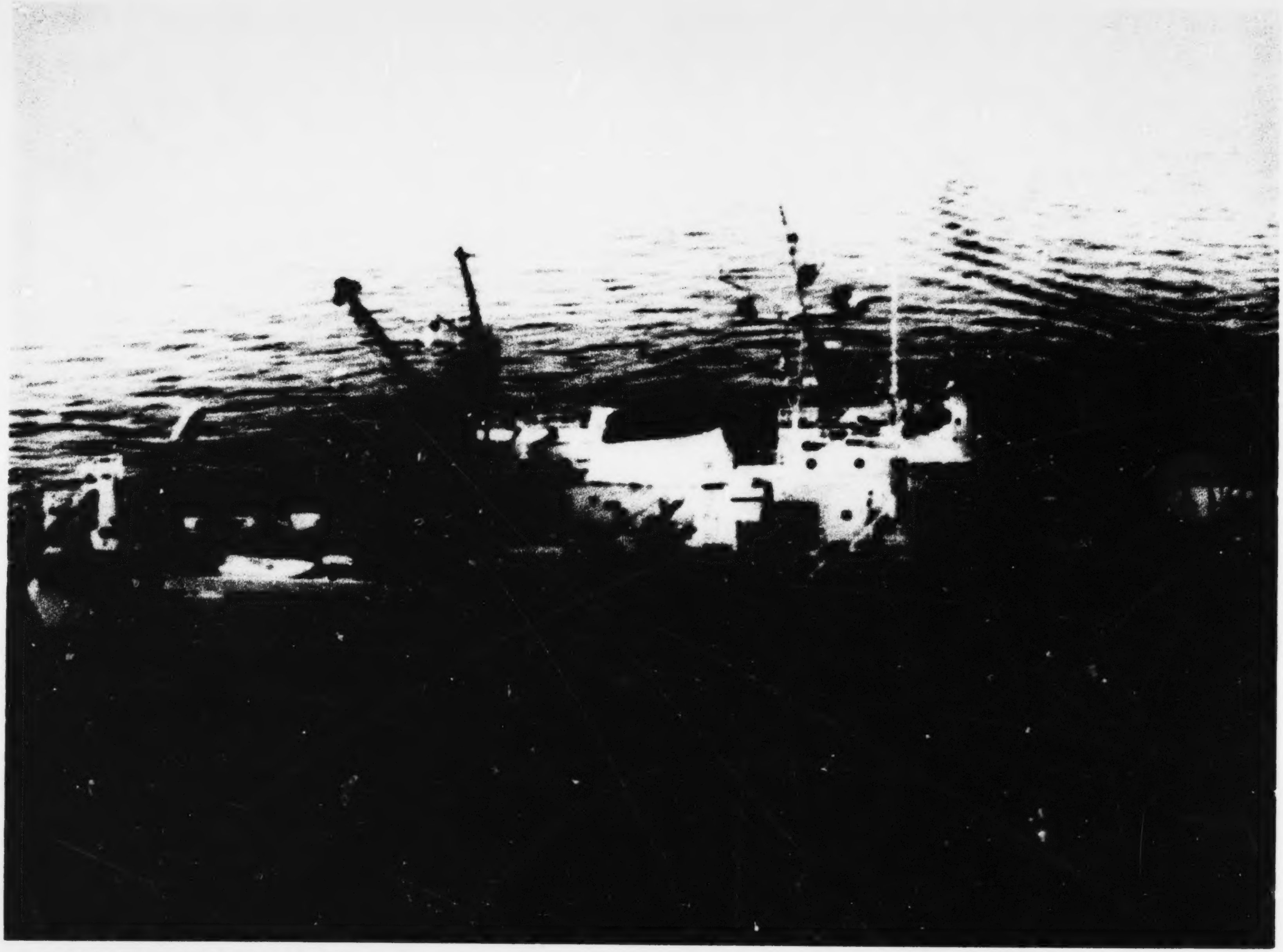

NOAA SHIP MILLER FREEMAN

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                 HECK
   NAME:                      CDR. R C ARNOLD
   OFFICE:                    CHIEF MARINE SERVICES DIVISION
   ORGANIZATION:              NOAA ATLANTIC MARINE CENTER
   ADDRESS:                   439 WEST YORK STREET
   CITY-STATE:                NORFOLK VA 23510
   FTS PREFIX:                827
   COMMERCIAL AREA CODE:      804
   PHONE:                     441-6440


     SHIP DIMENSIONS

   LENGTH:             90.0 FEET
   MAX BEAM:           22.0 FEET
   DISPLACEMENT:        220 TONS
   DRAUGHT:             7.2 FEET
   CRUISE SPEED:       10.0 KNOTS
   RANGE:               800 NAUTICAL MILES

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                 HECK                    LAST CHANGED 16 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

          ........................................
NOS                                                     NOAA

DEP: 02 MAR 87 NORFOLK            HDAS TESTING
ARR: 06 MAR 87 NORFOLK                                          5 DAY(S)
AREA INDEX: NA6

DEP: 09 MAR 87 NORFOLK            CHESAPEAKE BAY PROJECT
ARR: 13 MAR 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6

DEP: 16 MAR 87 ANNAPOLIS          CHESAPEAKE BAY PROJECT
ARR: 20 MAR 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6

DEP: 23 MAR 87 ANNAPOLIS          CHESAPEAKE BAY PROJECT
ARR: 27 MAR 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6

DEP: 30 MAR 87 ANNAPOLIS          CHESAPEAKE BAY PROJECT
ARR: 03 APR 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6

DEP: 06 APR 87 ANNAPOLIS          CHESAPEAKE BAY PROJECT
ARR: 10 APR 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6

DEP: 13 APR 87 ANNAPOLIS          CHESAPEAKE BAY PROJECT
ARR: 17 APR 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6

DEP: 20 APR 87 ANNAPOLIS          CHESAPEAKE BAY PROJECT
ARR: 24 APR 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6

DEP: 27 APR 87 ANNAPOLIS          CHESAPEAKE BAY PROJECT
ARR: 01 MAY 87 ANNAPOLIS                                        5 DAY(S)
AREA INDEX: NA6
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DEP: 04 MAY 87 ANNAPOLIS           CHESAPEAKE BAY PROJECT
ARR: 08 MAY 87 ANNAPOLIS                                            5 DAY(S)
AREA INDEX: NA6

DEP: 11 MAY 87 ANNAPOLIS           CHESAPEAKE BAY PROJECT
ARR: 15 MAY 87 ANNAPOLIS                                            5 DAY(S)
AREA INDEX: NA6

DEP: 18 MAY 87 ANNAPOLIS           CHESAPEAKE BAY PROJECT
ARR: 22 MAY 87 ANNAPOLIS                                            5 DAY(S)
AREA INDEX: NA6

DEP: 26 MAY 87 ANNAPOLIS           CHESAPEAKE BAY PROJECT
ARR: 29 MAY 87 ANNAPOLIS                                            4 DAY(S)
AREA INDEX: NA6

DEP: 01 JUN 87 ANNAPOLIS           CHESAPEAKE BAY PROJECT
ARR: 05 JUN 87 NORFOLK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 22 JUN 87 NORFOLK             NEW YORK HARBOR
ARR: 26 JUN 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 29 JUN 87 NEW YORK            NEW YORK HARBOR
ARR: 02 JUL 87 NEW YORK                                             4 DAY(S)
AREA INDEX: NA6

DEP: 06 JUL 87 NEW YORK            NEW YORK HARBOR
ARR: 10 JUL 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 13 JUL 87 NEW YORK            NEW YORK HARBOR
ARR: 17 JUL 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 20 JUL 87 NEW YORK            NEW YORK HARBOR
ARR: 24 JUL 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 27 JUL 87 NEW YORK            NEW YORK HARBOR
ARR: 31 JUL 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 03 AUG 87 NEW YORK            NEW YORK HARBOR
ARR: 07 AUG 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 10 AUG 87 NEW YORK            NEW YORK HARBOR
ARR: 14 AUG 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 17 AUG 87 NEW YORK            NEW YORK HARBOR
ARR: 21 AUG 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 24 AUG 87 NEW YORK            NEW YORK HARBOR
ARR: 28 AUG 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 NEW YORK            NEW YORK HARBOR
ARR: 04 SEP 87 NEW YORK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 NEW YORK            NEW YORK HARBOR
ARR: 31 AUG 87 NEW YORK                                             1 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 NEW YORK            NEW YORK HARBOR
ARR: 31 AUG 87 NEW YORK                                             1 DAY(S)
AREA INDEX: NA6
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DEP: 08 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 11 SEP 87 NEW YORK                                            4 DAY(S)
AREA INDEX: NA6

DEP: 14 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 18 SEP 87 NEW YORK                                            5 DAY(S)
AREA INDEX: NA6

DEP: 21 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 25 SEP 87 NEW YORK                                            5 DAY(S)
AREA INDEX: NA6

DEP: 28 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 02 OCT 87 NEW YORK                                            5 DAY(S)
AREA INDEX: NA6
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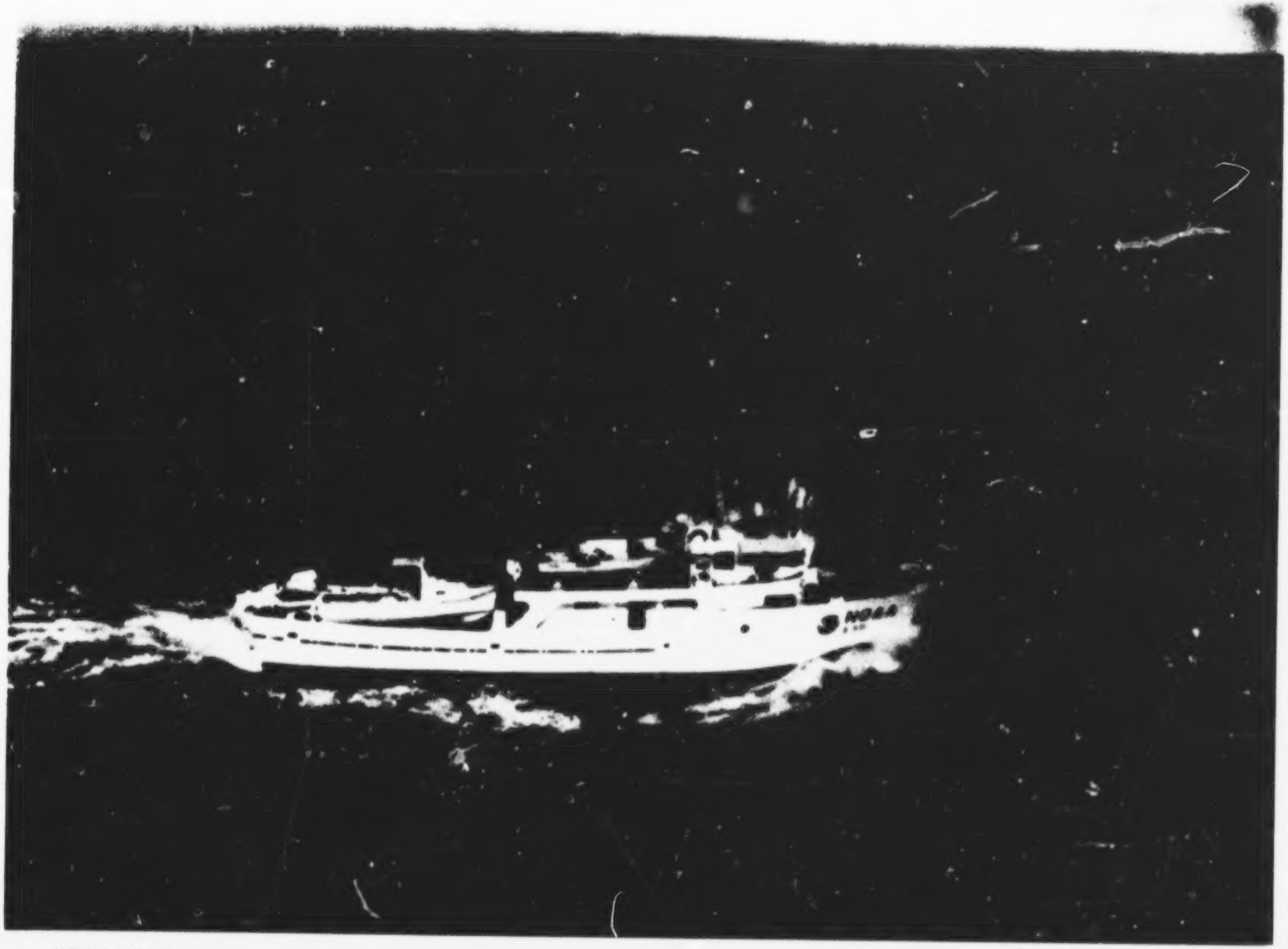

NOAA SHIP HECK

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  DAVID STARR JORDAN
    NAME:                       CAPT. W. F. FORSTER
    OFFICE:                     CHIEF OPERATIONS DIVISION
    ORGANIZATION:               NOAA PACIFIC MARINE CENTER
    ADDRESS:                    1801 FAIRVIEW AVENUE E
    CITY-STATE:                 SEATTLE WA  98102
    FTS PREFIX:                 206
    COMMERCIAL AREA CODE:       206
    PHONE:                      442-4548


      SHIP DIMENSIONS

    LENGTH:              171.0 FEET
    MAX BEAM:             36.6 FEET
    DISPLACEMENT:          993 TONS
    DRAUGHT:              12.5 FEET
    CRUISE SPEED:         11.5 KNOTS
    RANGE:                8560 NAUTICAL MILES

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                 DAVID STARR JORDAN         LAST CHANGED 05 JAN 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

      . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
NMFS                                                    NOAA

DEP: 06 JAN 87 SAN DIEGO           SWFC DOVER SOLE LEG I
ARR: 07 JAN 87 SAN DIEGO             DS8701(205)                   2 DAY(S)
AREA INDEX: NP9

DEP: 08 JAN 87 SAN DIEGO           SWFC DOVER SOLE LEG II
ARR: 23 JAN 87 MONTEREY              DS8701(205)                  16 DAY(S)
AREA INDEX: NP9

DEP: 23 JAN 87 MONTEREY            SWFC DOVER SOLE LEG III
ARR: 02 FEB 87 MONTEREY              DS8701(205)                  11 DAY(S)
AREA INDEX: NP9

DEP: 02 FEB 87 MONTEREY            SWFC DOVER SOLE LEG IV
ARR: 16 FEB 87 SAN DIEGO             DS8701(205)                  15 DAY(S)
AREA INDEX: NP9

DEP: 02 MAR 87 SAN DIEGO           SWFC CALCOFI
ARR: 16 MAR 87 SAN DIEGO             DS8702(206)                  15 DAY(S)
AREA INDEX: NP9

DEP: 07 APR 87 SAN DIEGO           SWFC GROUNDFISH STUDY
ARR: 24 APR 87 SAN DIEGO             DS8703(207)                  18 DAY(S)
AREA INDEX: NP9

DEP: 30 APR 87 SAN DIEGO           SWFC CALCOFI
ARR: 14 MAY 87 SAN DIEGO             DS8704(208)                  15 DAY(S)
AREA INDEX: NP9

DEP: 21 MAY 87 SAN DIEGO           SWFC ROCKFISH JUV. STUDY
ARR: 24 JUN 87 SAN DIEGO             DS8705(209)                  35 DAY(S)
AREA INDEX: NP9

DEP: 29 JUL 87 SAN DIEGO           SWFC PORPOISE C. PAC I
ARR: 27 AUG 87 MANZANILLO MEX        DS8706(210)                  30 DAY(S)
AREA INDEX: NP9   NP13
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DEP: 01 SEP 87 MANZANILLO MEX      SWFC PORPOISE C. PAC. II
ARR: 30 SEP 87 MANZANILLO MEX        DS8706(210)                     30 DAY(S)
AREA INDEX: NP13
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NOAA SHIP DAVID STARR JORDAN

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     POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  MCARTHUR
    NAME:                       CAPT. W. F. FORSTER
    OFFICE:                     CHIEF OPERATIONS DIVISION
    ORGANIZATION:               NOAA PACIFIC MARINE CENTER
    ADDRESS:                    1801 FAIRVIEW AVENUE E
    CITY-STATE:                 SEATTLE WA  98102
    FTS PREFIX:                 206
    COMMERCIAL AREA CODE:       206
    PHONE:                      442-4548


      SHIP DIMENSIONS

    LENGTH:            175.0 FEET
    MAX BEAM:           38.0 FEET
    DISPLACEMENT:        995 TONS
    DRAUGHT:            12.1 FEET
    CRUISE SPEED:       12.0 KNOTS
    RANGE:              6000 NAUTICAL MILES

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                MCARTHUR                   LAST CHANGED 05 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

        ........................................
NOS                                                    NOAA

DEP: 04 MAY 87 SEATTLE            PMEL ACID RAIN
ARR: 23 MAY 87 SEATTLE                                          20 DAY(S)
AREA INDEX: NP9

DEP: 11 JUN 87 SEATTLE            STATUS & TRENDS
ARR: 20 JUN 87 SAN FRANCISCO                                    10 DAY(S)
AREA INDEX: NP9

DEP: 21 JUN 87 SAN FRANCISCO      STATUS & TRENDS
ARR: 03 JUL 87 SAN FRANCISCO                                    13 DAY(S)
AREA INDEX: NP9

DEP: 06 JUL 87 SAN FRANCISCO      STATUS & TRENDS
ARR: 17 JUL 87 SAN DIEGO                                        12 DAY(S)
AREA INDEX: NP9

DEP: 20 JUL 87 SAN DIEGO          STATUS & TRENDS
ARR: 24 JUL 87 SAN DIEGO                                         5 DAY(S)
AREA INDEX: NP9

DEP: 03 AUG 87 SAN DIEGO          SWFC PORPOISE
ARR: 01 SEP 87 RODMAN C.Z.                                      30 DAY(S)
AREA INDEX: NP9   NP13

DEP: 07 SEP 87 RODMAN C.Z.        SWFC PORPOISE
ARR: 30 SEP 87 AT SEA                                           24 DAY(S)
AREA INDEX: NP13
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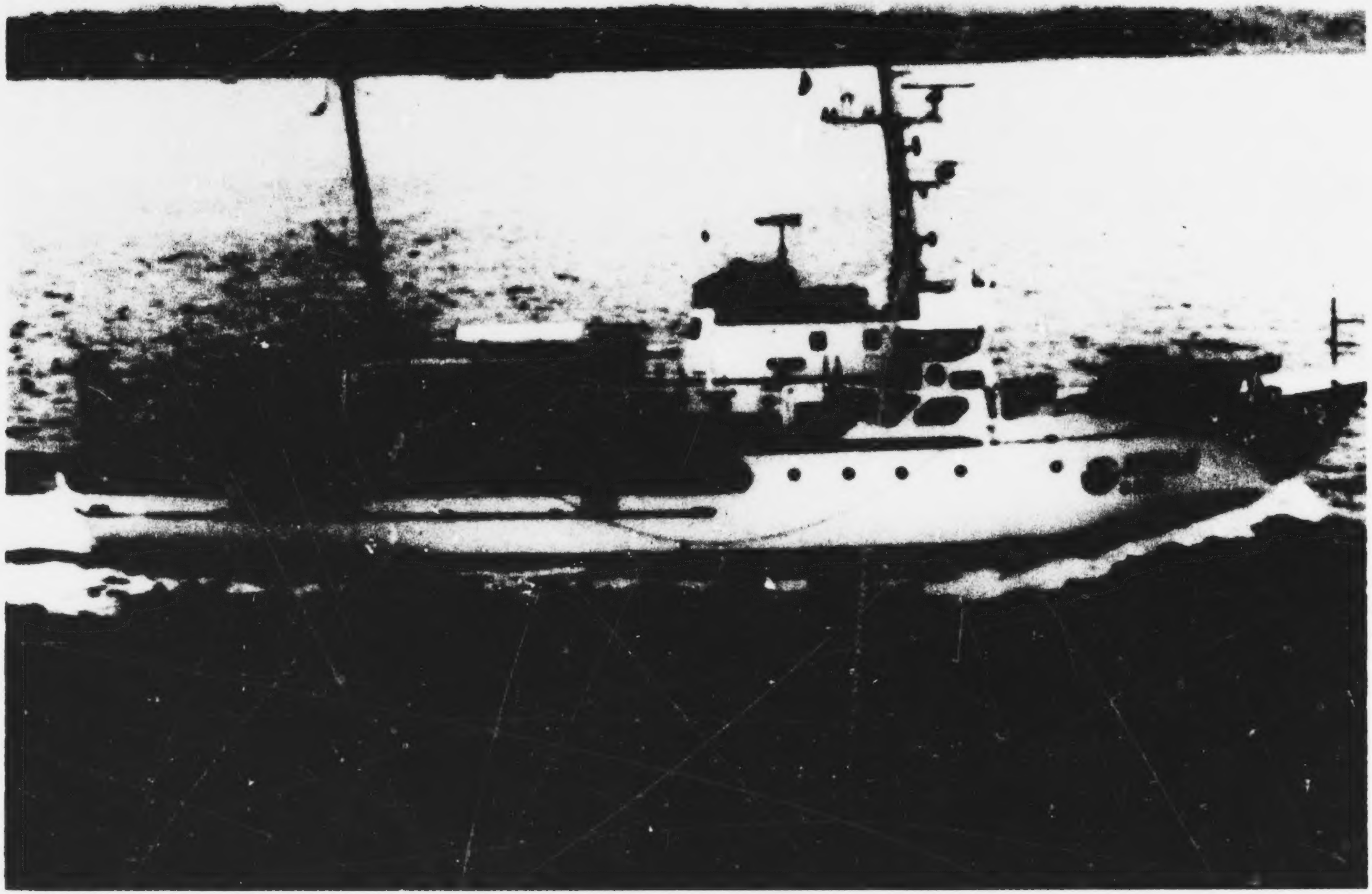

NOAA SHIP McARTHUR

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     POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  MT MITCHELL
    NAME:                       CDR. R C ARNOLD
    OFFICE:                     CHIEF MARINE SERVICES DIVISION
    ORGANIZATION:               NOAA ATLANTIC MARINE CENTER
    ADDRESS:                    439 WEST YORK STREET
    CITY-STATE:                 NORFOLK VA 23510
    FTS PREFIX:                 827
    COMMERCIAL AREA CODE:       804
    PHONE:                      441-6440


      SHIP DIMENSIONS

    LENGTH:             231.0 FEET
    MAX BEAM:            42.0 FEET
    DISPLACEMENT:        1800 TONS
    DRAUGHT:             14.3 FEET
    CRUISE SPEED:        13.0 KNOTS
    RANGE:               7000 NAUTICAL MILES

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                  MT MITCHELL               LAST CHANGED 04 FEB 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

       ............................................
NOS                                                        NOAA

DEP: 10 FEB 87 SEATTLE            TRANSIT/ANCILLARY TASKS
ARR: 24 FEB 87 RODMAN                                               15 DAY(S)
AREA INDEX: NP9   NP13

DEP: 26 FEB 87 RODMAN             TRANSIT/ANCILLARY TASKS
ARR: 05 MAR 87 NORFOLK                                               8 DAY(S)
AREA INDEX: NP13  NA6
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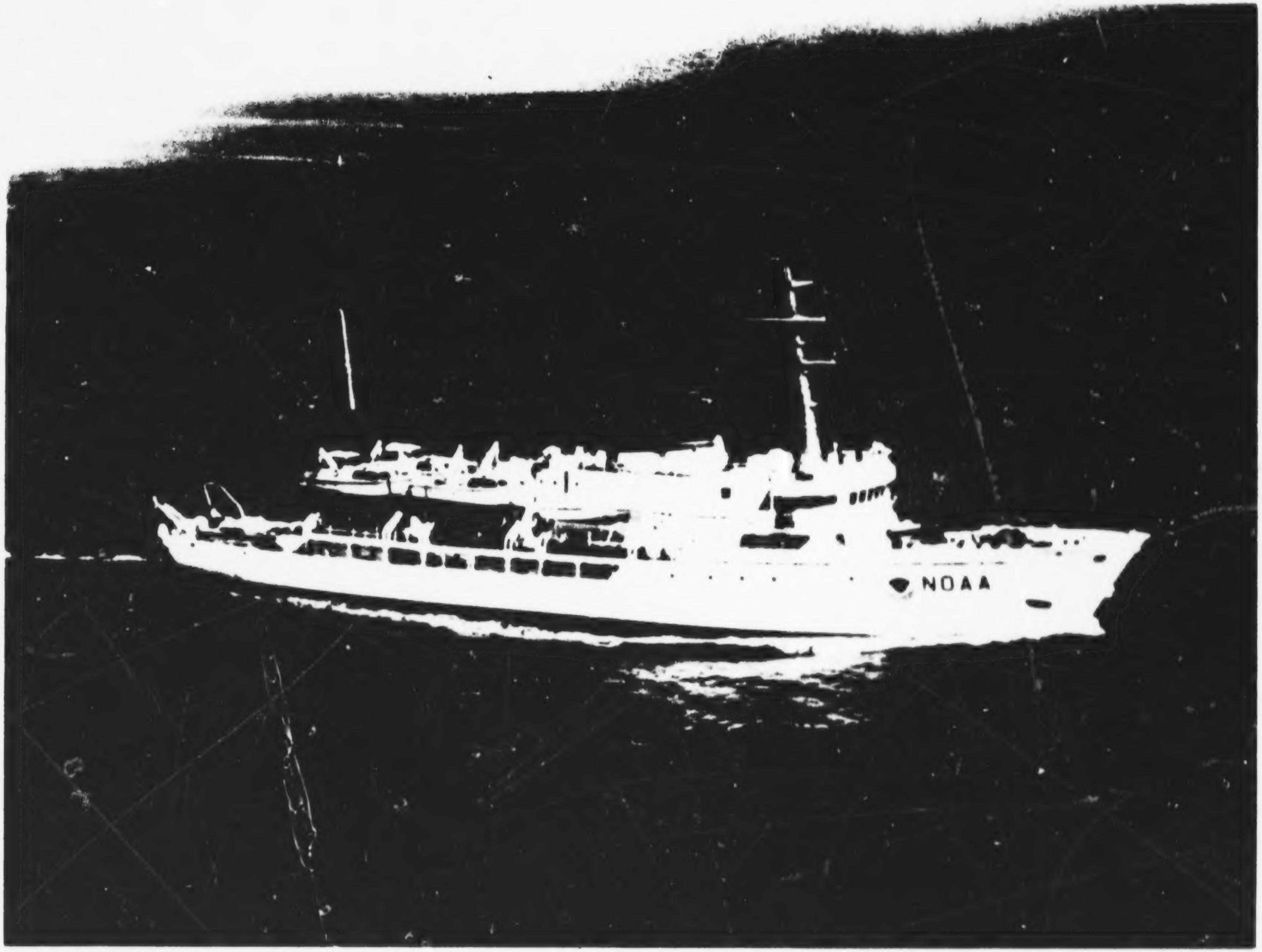

NOAA SHIP MT. MITCHELL

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     POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  MURRE II
    NAME:                       CAPT. W. F. FORSTER
    OFFICE:                     CHIEF OPERATIONS DIVISION
    ORGANIZATION:               NOAA PACIFIC MARINE CENTER
    ADDRESS:                    1801 FAIRVIEW AVENUE E
    CITY-STATE:                 SEATTLE WA  98102
    FTS PREFIX:                 206
    COMMERCIAL AREA CODE:       206
    PHONE:                      442-4548


      SHIP DIMENSIONS

    LENGTH:                86.0 FEET
    MAX BEAM:              26.8 FEET
    DISPLACEMENT:           295 TONS
    DRAUGHT:                7.5 FEET
    CRUISE SPEED:           8.0 KNOTS
    RANGE:                 1500 NAUTICAL MILES

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                      MURRE II                  LAST CHANGED 18 NOV 86

                     OPS SCHEDULE FOR PERIOD
                     01 JAN 87 THRU 31 DEC 87

            ..........................................
NMFS                                                            NOAA

DEP: 09 MAR 87 JUNEAU                      NMFS AB JUV. SALMON
ARR: 20 MAR 87 JUNEAU                        MU8702                      12 DAY(S)
AREA INDEX: NP6

DEP: 30 MAR 87 JUNEAU                      NMFS AB LPW
ARR: 03 APR 87 JUNEAU                        MU8703                       5 DAY(S)
AREA INDEX: NP6
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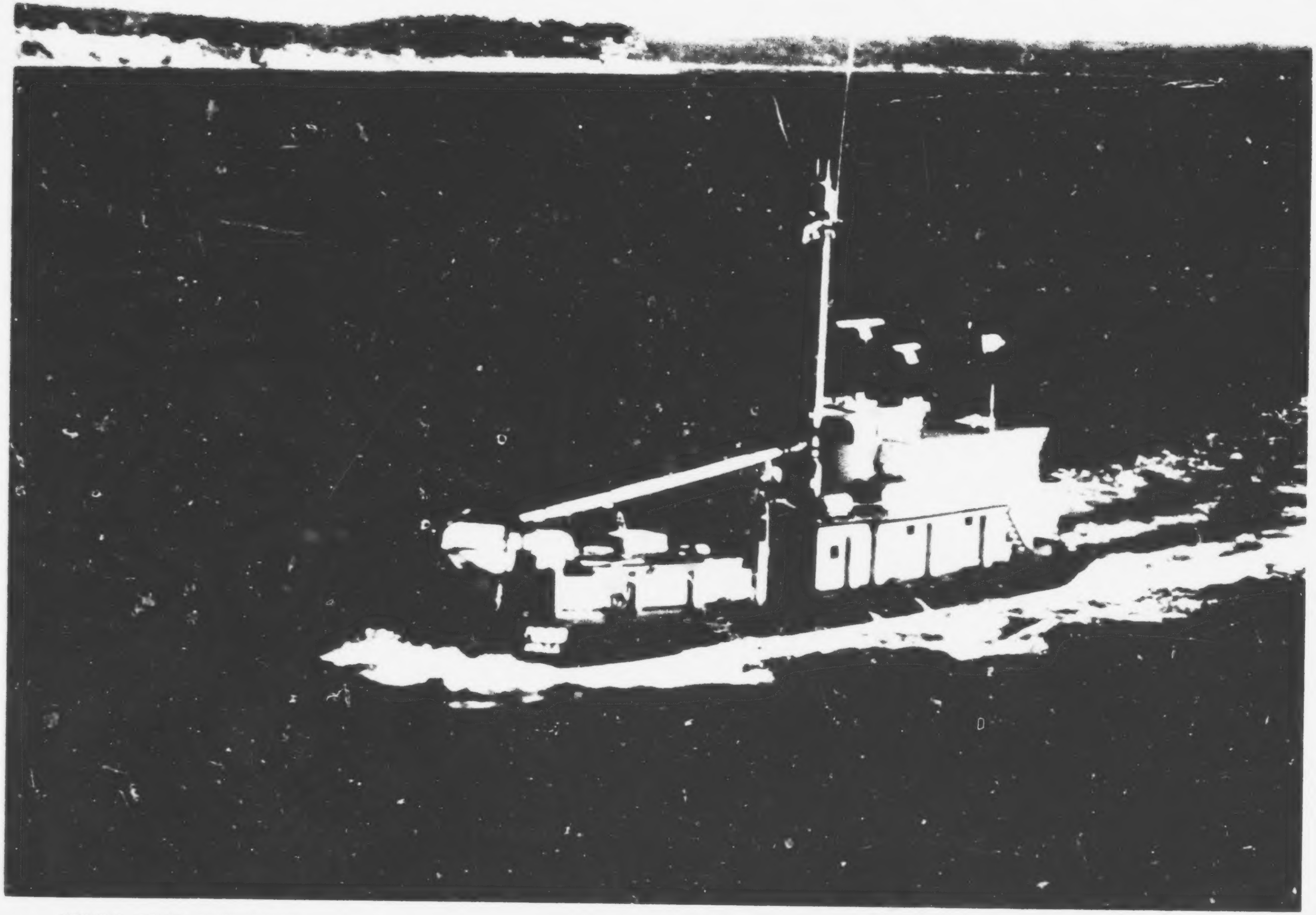

NOAA SHIP MURRE II

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*******************************************************
     POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                 OREGON II
    NAME:                      CDR. R C ARNOLD
    OFFICE:                    CHIEF MARINE SERVICES DIVISION
    ORGANIZATION:              NOAA ATLANTIC MARINE CENTER
    ADDRESS:                   439 WEST YORK STREET
    CITY-STATE:                NORFOLK VA 23510
    FTS PREFIX:                827
    COMMERCIAL AREA CODE:      804
    PHONE:                     441-6440


     SHIP DIMENSIONS

    LENGTH:             170.0 FEET
    MAX BEAM:            34.0 FEET
    DISPLACEMENT:         952 TONS
    DRAUGHT:             14.0 FEET
    CRUISE SPEED:        12.0 KNOTS
    RANGE:               9500 NAUTICAL MILES

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                 OREGON II                LAST CHANGED 04 FEB 87

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

          .........................................
NMFS                                                 NOAA

DEP: 06 JAN 87 PASCAGOULA           REEF FISH SURVEY
ARR: 21 JAN 87 ST PETERSBURG          OT-87-01                        16 DAY(S)
AREA INDEX: NA6    NA9

DEP: 22 JAN 87 ST PETERSBURG        REEF FISH SURVEY
ARR: 03 FEB 87 PASCAGOULA             OT-87-01                        13 DAY(S)
AREA INDEX: NA9    NA6

DEP: 07 FEB 87 PASCAGOULA           SHIPYARD PERIOD
ARR: 06 MAR 87 PASCAGOULA                                             28 DAY(S)
AREA INDEX: NA6

DEP: 10 MAR 87 PASCAGOULA           SEAMAP SURVEY
ARR: 15 MAR 87 PORT CANAVERAL                                          6 DAY(S)
AREA INDEX: NA6    NA9

DEP: 16 MAR 87 PORT CANAVERAL       SEAMAP SURVEY
ARR: 24 MAR 87 BRUNSWICK                                               9 DAY(S)
AREA INDEX: NA9    NA6

DEP: 25 MAR 87 BRUNSWICK            SEAMAP SURVEY
ARR: 29 MAR 87 CHARLESTON                                              5 DAY(S)
AREA INDEX: NA6

DEP: 29 MAR 87 BRUNSWICK            SEAMAP SURVEY
ARR: 30 MAR 87 PORT CANAVERAL                                          2 DAY(S)
AREA INDEX: NA6    NA9

DEP: 30 MAR 87 CHARLESTON           SEAMAP SURVEY
ARR: 04 APR 87 CHARLESTON                                              6 DAY(S)
AREA INDEX: NA6

DEP: 05 APR 87 CHARLESTON           SEAMAP SURVEY
ARR: 10 APR 87 PASCAGOULA                                              6 DAY(S)
AREA INDEX: NA6
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DEP: 14 APR 87 PASCAGOULA          ICHTHYOPLANKTON SURVEY
ARR: 28 APR 87 PASCAGOULA            OT-87-03                     15 DAY(S)
AREA INDEX: NA6

DEP: 29 APR 87 PASCAGOULA          ICHTHYOPLANKTON SURVEY
ARR: 13 MAY 87 PASCAGOULA            OT-87-03                     15 DAY(S)
AREA INDEX: NA6

DEP: 02 JUN 87 PASCAGOULA          SUMMER SEAMAP SURVEY
ARR: 08 JUN 87 PASCAGOULA            OT-87-04                      7 DAY(S)
AREA INDEX: NA6

DEP: 10 JUN 87 PASCAGOULA          SUMMER SEAMAP SURVEY
ARR: 25 JUN 87 PASCAGOULA            OT-87-04                     16 DAY(S)
AREA INDEX: NA6

DEP: 26 JUN 87 PASCAGOULA          SUMMER SEAMAP SURVEY
ARR: 17 JUL 87 PASCAGOULA            OT-87-04                     22 DAY(S)
AREA INDEX: NA6

DEP: 28 JUL 87 PASCAGOULA          REEF FISH SURVEY
ARR: 12 AUG 87 PASCAGOULA            OT-87-05                     16 DAY(S)
AREA INDEX: NA6

DEP: 13 AUG 87 PASCAGOULA          REEF FISH SURVEY
ARR: 28 AUG 87 PASCAGOULA            OT-87-05                     16 DAY(S)
AREA INDEX: NA6

DEP: 01 SEP 87 PASCAGOULA          ICHTHYOPLANKTON SURVEY
ARR: 15 SEP 87 PASCAGOULA            OT-87-06                     15 DAY(S)
AREA INDEX: NA6

DEP: 16 SEP 87 PASCAGOULA          ICHTHYOPLANKTON SURVEY
ARR: 30 SEP 87 PASCAGOULA            OT-87-06                     15 DAY(S)
AREA INDEX: NA6
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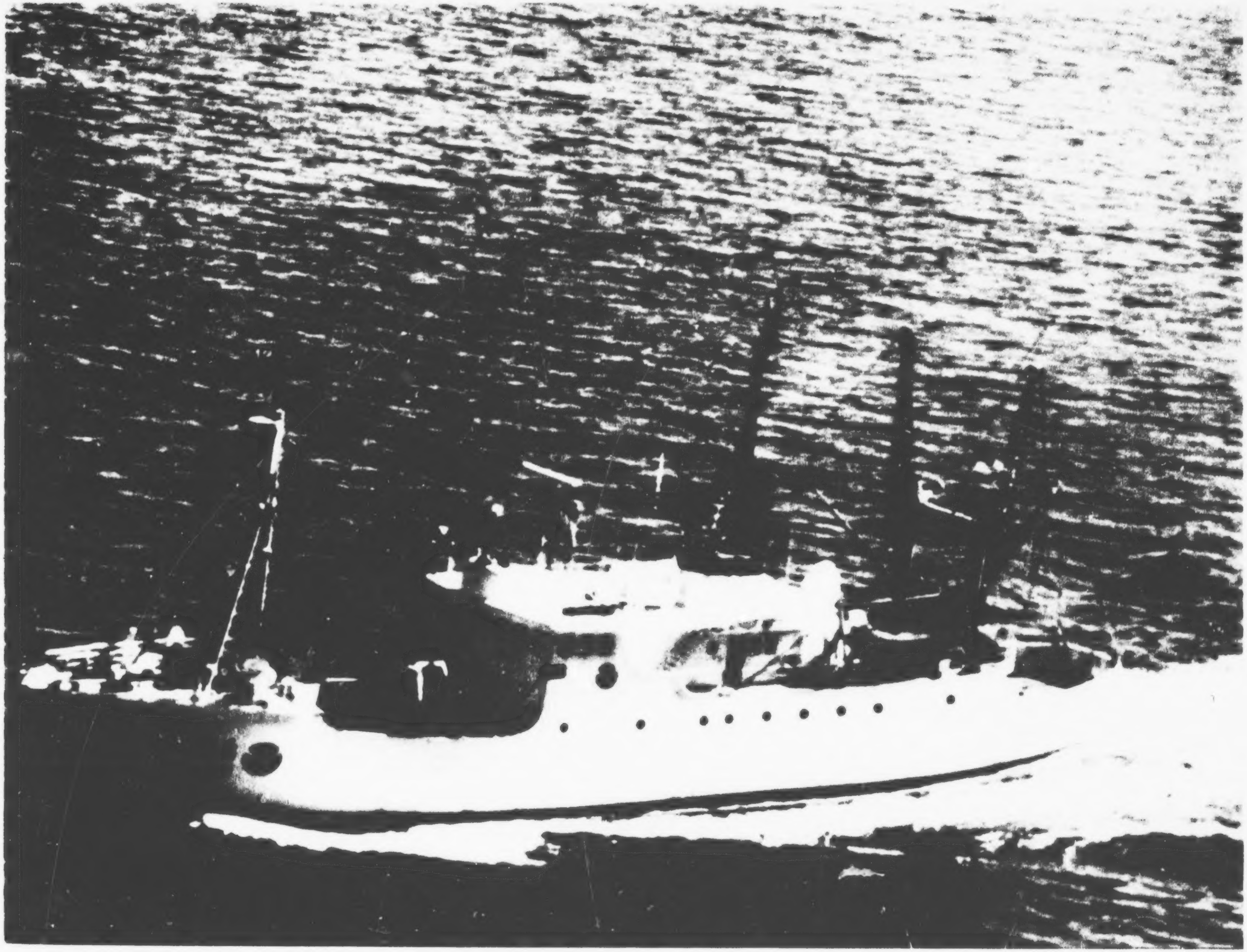

NOAA SHIP OREGON II

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                 PEIRCE
    NAME:                      CDR. R C ARNOLD
    OFFICE:                    CHIEF MARINE SERVICES DIVISION
    ORGANIZATION:              NOAA ATLANTIC MARINE CENTER
    ADDRESS:                   439 WEST YORK STREET
    CITY-STATE:                NORFOLK VA 23510
    FTS PREFIX:                827
    COMMERCIAL AREA CODE:      804
    PHONE:                     441-6440


      SHIP DIMENSIONS

    LENGTH:            163.0 FEET
    MAX BEAM:           33.0 FEET
    DISPLACEMENT:        907 TONS
    DRAUGHT:            11.2 FEET
    CRUISE SPEED:       12.0 KNOTS
    RANGE:              5700 NAUTICAL MILES

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                    PEIRCE                    LAST CHANGED 16 JAN 87

                   OPS SCHEDULE FOR PERIOD
                   01 JAN 87 THRU 31 DEC 87

              . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
NOS                                                        NOAA

DEP: 01 JAN 87 NORFOLK                  INACTIVE SHIP
ARR: 30 SEP 87 NORFOLK                                               273 DAY(S)
AREA INDEX: NA6
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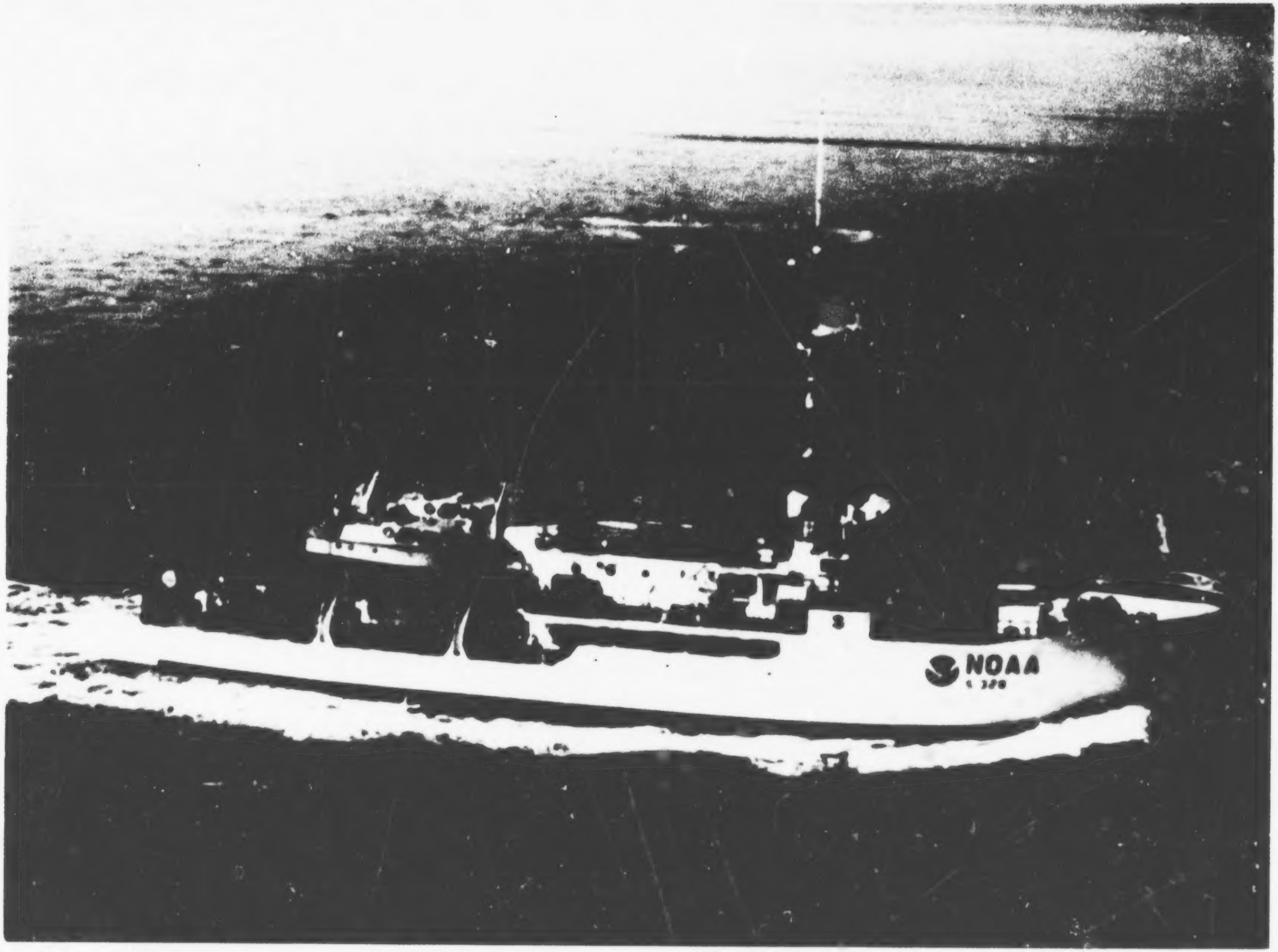

NOAA SHIP PEIRCE

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                RAINIER
    NAME:                     CAPT. W. F. FORSTER
    OFFICE:                   CHIEF OPERATIONS DIVISION
    ORGANIZATION:             NOAA PACIFIC MARINE CENTER
    ADDRESS:                  1801 FAIRVIEW AVENUE E
    CITY-STATE:               SEATTLE WA  98102
    FTS PREFIX:               206
    COMMERCIAL AREA CODE:     206
    PHONE:                    442-4548


      SHIP DIMENSIONS

    LENGTH:            231.0 FEET
    MAX BEAM:           42.0 FEET
    DISPLACEMENT:       1800 TONS
    DRAUGHT:            14.3 FEET
    CRUISE SPEED:       13.0 KNOTS
    RANGE:              7000 NAUTICAL MILES

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                 RAINIER                  LAST CHANGED 01 DEC 86

                OPS SCHEDULE FOR PERIOD
                01 JAN 87 THRU 31 DEC 87

NOS                                                   NOAA

DEP: 07 APR 87 SEATTLE              HYDRO SURVEY, SEYMOUR CANAL
ARR: 17 APR 87 JUNEAU                 OPR-0179                    11 DAY(S)
AREA INDEX: NP9    NP6

DEP: 20 APR 87 JUNEAU               HYDRO SURVEY, FREDERICK SOUND
ARR: 01 MAY 87 JUNEAU                 OPR-0358                    12 DAY(S)
AREA INDEX: NP6

DEP: 04 MAY 87 JUNEAU               HYDRO SURVEY, FREDERICK SOUND
ARR: 20 MAY 87 JUNEAU                 OPR-0358                    17 DAY(S)
AREA INDEX: NP6

DEP: 26 MAY 87 JUNEAU               HYDRO SURVEY TOGIAK BAY AK
ARR: 12 JUN 87 DUTCH HARBOR           OPR-R184                    18 DAY(S)
AREA INDEX: NP6    NP5    NP6

DEP: 15 JUN 87 DUTCH HARBOR         HYDRO SURVEY TOGIAK BAY AK
ARR: 02 JUL 87 DUTCH HARBOR           OPR-R184                    18 DAY(S)
AREA INDEX: NP5    NP6

DEP: 06 JUL 87 DUTCH HARBOR         HYDRO SURVEY TOGIAK BAY AK
ARR: 24 JUL 87 DUTCH HARBOR           OPR-R184                    19 DAY(S)
AREA INDEX: NP5    NP6

DEP: 27 JUL 87 DUTCH HARBOR         HYDRO SURVEY TOGIAK BAY AK
ARR: 14 AUG 87 DUTCH HARBOR           OPR-R184                    19 DAY(S)
AREA INDEX: NP5    NP6

DEP: 17 AUG 87 DUTCH HARBOR         HYDRO SURVEY TOGIAK BAY AK
ARR: 04 SEP 87 DUTCH HARBOR           OPR-R184                    19 DAY(S)
AREA INDEX: NP5    NP6

DEP: 08 SEP 87 DUTCH HARBOR         HYDRO SURVEY TOGIAK BAY AK
ARR: 14 SEP 87 SEATTLE                OPR-R184                     7 DAY(S)
AREA INDEX: NP5    NP6    NP9
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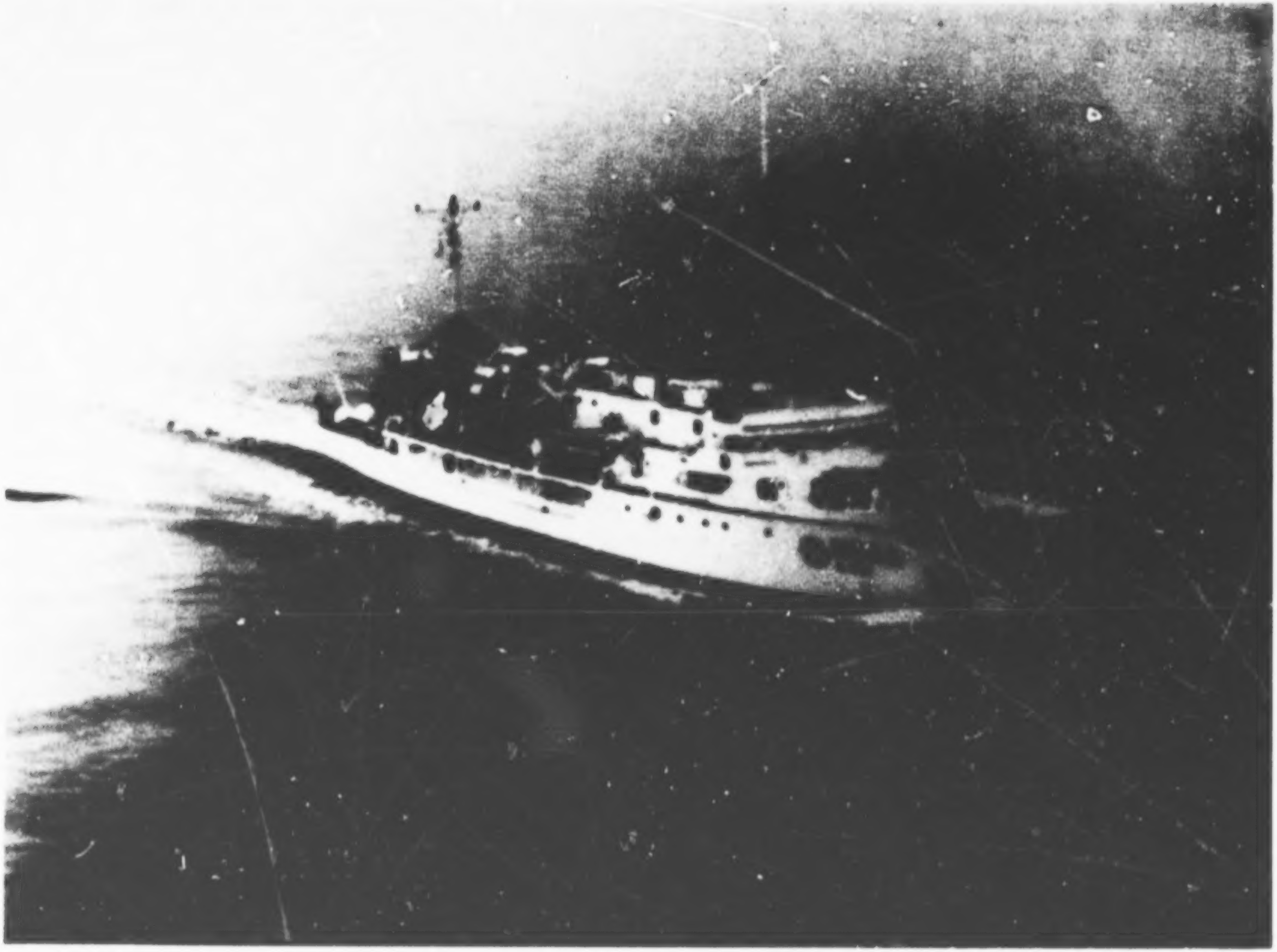

NOAA SHIP RAINIER

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                 RESEARCHER
    NAME:                      CDR. R C ARNOLD
    OFFICE:                    CHIEF MARINE SERVICES DIVISION
    ORGANIZATION:              NOAA ATLANTIC MARINE CENTER
    ADDRESS:                   439 WEST YORK STREET
    CITY-STATE:                NORFOLK VA 23510
    FTS PREFIX:                827
    COMMERCIAL AREA CODE:      804
    PHONE:                     441-6440


      SHIP DIMENSIONS

    LENGTH:               278.3 FEET
    MAX BEAM:              51.0 FEET
    DISPLACEMENT:          2963 TONS
    DRAUGHT:               18.3 FEET
    CRUISE SPEED:          12.5 KNOTS
    RANGE:                10800 NAUTICAL MILES

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                  RESEARCHER                 LAST CHANGED 04 FEB 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

       . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
ERL                                                          NOAA

DEP: 12 JAN 87 MIAMI                  SHIPYARD
ARR: 18 FEB 87 MIAMI                                                      38 DAY(S)
AREA INDEX: NA9

DEP: 02 MAR 87 MIAMI                  STACS
ARR: 13 MAR 87 ST THOMAS                RP-44-RE-87                       12 DAY(S)
AREA INDEX: NA9

DEP: 16 MAR 87 ST THOMAS              STACS
ARR: 20 MAR 87 MIAMI                    RP-44-43-87                        5 DAY(S)
AREA INDEX: NA9

DEP: 20 MAR 87 MIAMI                  STACS
ARR: 27 MAR 87 MIAMI                    RP-44-43-87                        8 DAY(S)
AREA INDEX: NA9

DEP: 13 APR 87 MIAMI                  EPOCS I
ARR: 18 APR 87 RODMAN                   RP-44-RE-87                        6 DAY(S)
AREA INDEX: NA9   NP13

DEP: 20 APR 87 RODMAN                 EPOCS I
ARR: 18 MAY 87 HONOLULU                 RP-44-RE-87                       29 DAY(S)
AREA INDEX: NP13  NP12

DEP: 26 MAY 87 HONOLULU               RITS
ARR: 29 MAY 87 HILO                     RP-44-RE-87                        4 DAY(S)
AREA INDEX: NP12

DEP: 29 MAY 87 HILO                   RITS
ARR: 19 JUN 87 PAPEETE                  RP-44-RE-87                       22 DAY(S)
AREA INDEX: NP12  SP2

DEP: 23 JUN 87 PAPEETE                EPOCS II
ARR: 23 JUL 87 CALLAO                   RP-44-RE-87                       31 DAY(S)
AREA INDEX: SP2   SP3A
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DEP: 27 JUL 87 CALLAO                 EPOCS II
ARR: 01 AUG 87 RODMAN                   RP-44-RE-87                 6 DAY(S)
AREA INDEX: SP3A  NP13

DEP: 02 AUG 87 RODMAN                 EPOCS II
ARR: 07 AUG 87 MIAMI                    RP-44-RE-87                 6 DAY(S)
AREA INDEX: NP13  NA9

DEP: 16 AUG 87 RODMAN                 EPOCS II
ARR: 21 AUG 87 MIAMI                    RP-01-RE-87                 6 DAY(S)
AREA INDEX: NP13  NA9

DEP: 08 SEP 87 MIAMI                  STACS
ARR: 18 SEP 87 ST THOMAS                RP-44-RE-87                11 DAY(S)
AREA INDEX: NA9

DEP: 20 SEP 87 ST THOMAS              STACS
ARR: 05 OCT 87 MIAMI                    RP-44-RE-87                15 DAY(S)
AREA INDEX: NA9
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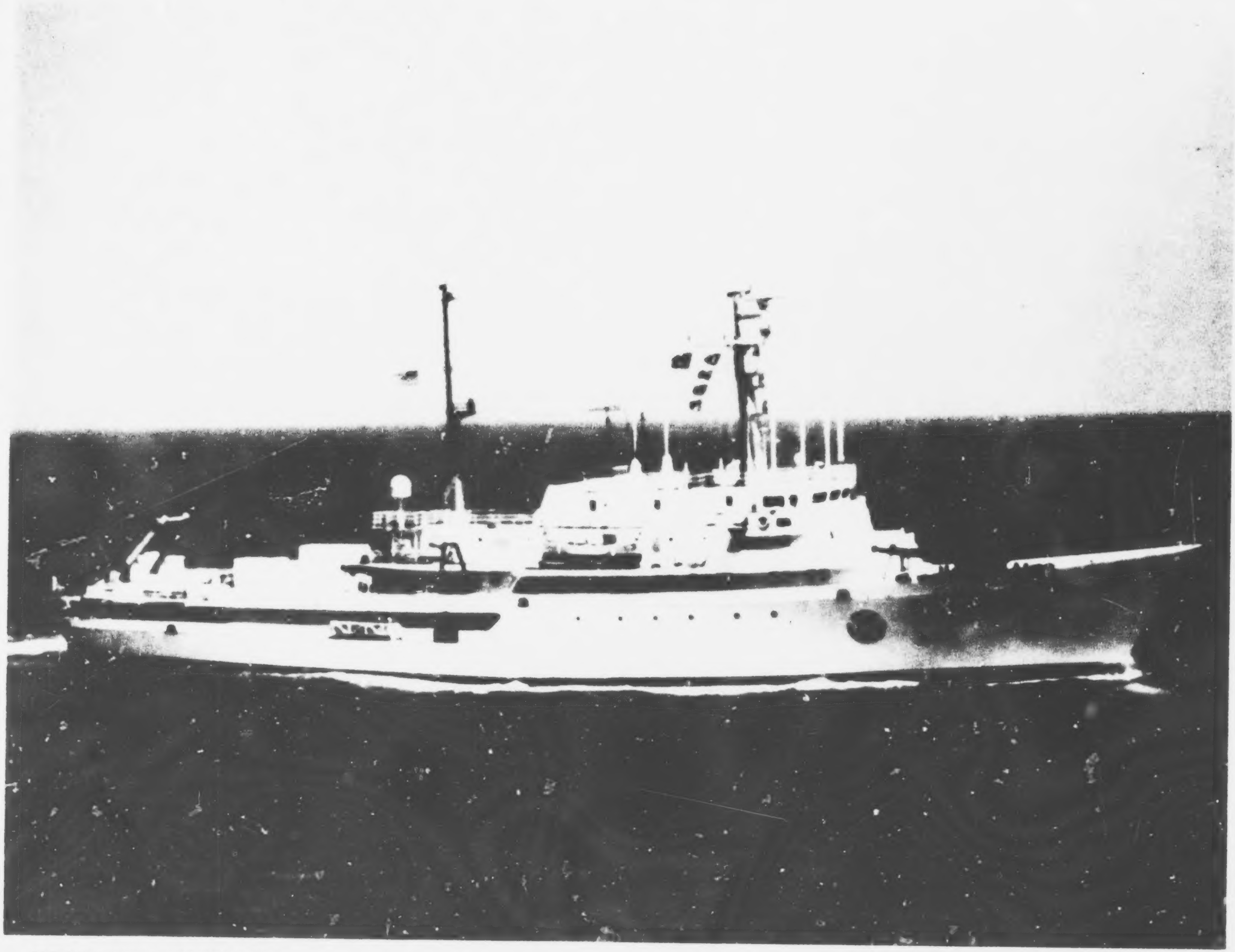

NOAA SHIP RESEARCHER

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                 RUDE
   NAME:                      CDR. R C ARNOLD
   OFFICE:                    CHIEF MARINE SERVICES DIVISION
   ORGANIZATION:              NOAA ATLANTIC MARINE CENTER
   ADDRESS:                   439 WEST YORK STREET
   CITY-STATE:                NORFOLK VA 23510
   FTS PREFIX:                827
   COMMERCIAL AREA CODE:      804
   PHONE:                     441-6440


     SHIP DIMENSIONS

   LENGTH:           90.0 FEET
   MAX BEAM:         22.0 FEET
   DISPLACEMENT:      220 TONS
   DRAUGHT:           7.2 FEET
   CRUISE SPEED:     10.0 KNOTS
   RANGE:             800 NAUTICAL MILES

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                RUDE                LAST CHANGED 16 JAN 87

               OPS SCHEDULE FOR PERIOD
               01 JAN 87 THRU 31 DEC 87

          .......................................
NOS                                                         NOAA

DEP: 02 MAR 87 NORFOLK          HDAS TESTING
ARR: 06 MAR 87 NORFOLK                                             5 DAY(S)
AREA INDEX: NA6

DEP: 09 MAR 87 NORFOLK          CHESAPEAKE BAY PROJECT
ARR: 13 MAR 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6

DEP: 16 MAR 87 ANNAPOLIS        CHESAPEAKE BAY PROJECT
ARR: 20 MAR 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6

DEP: 23 MAR 87 ANNAPOLIS        CHESAPEAKE BAY PROJECT
ARR: 27 MAR 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6

DEP: 30 MAR 87 ANNAPOLIS        CHESAPEAKE BAY PROJECT
ARR: 03 APR 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6

DEP: 06 APR 87 ANNAPOLIS        CHESAPEAKE BAY PROJECT
ARR: 10 APR 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6

DEP: 13 APR 87 ANNAPOLIS        CHESAPEAKE BAY PROJECT
ARR: 17 APR 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6

DEP: 20 APR 87 ANNAPOLIS        CHESAPEAKE BAY PROJECT
ARR: 24 APR 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6

DEP: 27 APR 87 ANNAPOLIS        CHESAPEAKE BAY PROJECT
ARR: 01 MAY 87 ANNAPOLIS                                           5 DAY(S)
AREA INDEX: NA6
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DEP: 04 MAY 87 ANNAPOLIS            CHESAPEAKE BAY PROJECT
ARR: 08 MAY 87 ANNAPOLIS                                             5 DAY(S)
AREA INDEX: NA6

DEP: 11 MAY 87 ANNAPOLIS            CHESAPEAKE BAY PROJECT
ARR: 15 MAY 87 ANNAPOLIS                                             5 DAY(S)
AREA INDEX: NA6

DEP: 18 MAY 87 ANNAPOLIS            CHESAPEAKE BAY PROJECT
ARR: 22 MAY 87 ANNAPOLIS                                             5 DAY(S)
AREA INDEX: NA6

DEP: 26 MAY 87 ANNAPOLIS            CHESAPEAKE BAY PROJECT
ARR: 29 MAY 87 ANNAPOLIS                                             4 DAY(S)
AREA INDEX: NA6

DEP: 01 JUN 87 ANNAPOLIS            CHESAPEAKE BAY PROJECT
ARR: 05 JUN 87 NORFOLK                                               5 DAY(S)
AREA INDEX: NA6

DEP: 22 JUN 87 NORFOLK              NEW YORK HARBOR
ARR: 26 JUN 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 29 JUN 87 NEW YORK             NEW YORK HARBOR
ARR: 02 JUL 87 NEW YORK                                              4 DAY(S)
AREA INDEX: NA6

DEP: 06 JUL 87 NEW YORK             NEW YORK HARBOR
ARR: 10 JUL 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 13 JUL 87 NEW YORK             NEW YORK HARBOR
ARR: 17 JUL 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 20 JUL 87 NEW YORK             NEW YORK HARBOR
ARR: 24 JUL 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 27 JUL 87 NEW YORK             NEW YORK HARBOR
ARR: 31 JUL 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 03 AUG 87 NEW YORK             NEW YORK HARBOR
ARR: 07 AUG 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 10 AUG 87 NEW YORK             NEW YORK HARBOR
ARR: 14 AUG 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 17 AUG 87 NEW YORK             NEW YORK HARBOR
ARR: 21 AUG 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 24 AUG 87 NEW YORK             NEW YORK HARBOR
ARR: 28 AUG 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 NEW YORK             NEW YORK HARBOR
ARR: 04 SEP 87 NEW YORK                                              5 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 NEW YORK             NEW YORK HARBOR
ARR: 31 AUG 87 NEW YORK                                              1 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 NEW YORK             NEW YORK HARBOR
ARR: 31 AUG 87 NEW YORK                                              1 DAY(S)
AREA INDEX: NA6
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DEP: 08 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 11 SEP 87 NEW YORK                                          4 DAY(S)
AREA INDEX: NA6

DEP: 14 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 18 SEP 87 NEW YORK                                          5 DAY(S)
AREA INDEX: NA6

DEP: 21 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 25 SEP 87 NEW YORK                                          5 DAY(S)
AREA INDEX: NA6

DEP: 28 SEP 87 NEW YORK            NEW YORK HARBOR
ARR: 02 OCT 87 NEW YORK                                          5 DAY(S)
AREA INDEX: NA6
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A SHIP RUDE

296

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  SURVEYOR
    NAME:                       CAPT. W. F. FORSTER
    OFFICE:                     CHIEF OPERATIONS DIVISION
    ORGANIZATION:               NOAA PACIFIC MARINE CENTER
    ADDRESS:                    1801 FAIRVIEW AVENUE E
    CITY-STATE:                 SEATTLE WA  98102
    FTS PREFIX:                 206
    COMMERCIAL AREA CODE:       206
    PHONE:                      442-4548


      SHIP DIMENSIONS

    LENGTH:            292.2 FEET
    MAX BEAM:           46.0 FEET
    DISPLACEMENT:       3440 TONS
    DRAUGHT:            19.5 FEET
    CRUISE SPEED:       13.5 KNOTS
    RANGE:             13680 NAUTICAL MILES

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                  SURVEYOR                 LAST CHANGED 05 JAN 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

ERL                                                  NOAA

DEP: 09 MAR 87 SEATTLE            EEZ-HAWAIIAN IS.
ARR: 20 MAR 87 HILO                                           12 DAY(S)
AREA INDEX: NP9   NP12

DEP: 23 MAR 87 HILO               EEZ-HAWAIIAN IS.
ARR: 10 APR 87 HILO                                           19 DAY(S)
AREA INDEX: NP12

DEP: 13 APR 87 HILO               EEZ-HAWAIIAN IS.
ARR: 01 MAY 87 HILO                                           19 DAY(S)
AREA INDEX: NP12

DEP: 04 MAY 87 HILO               EEZ PRINCE WILLIAM SOUND
ARR: 23 MAY 87 KODIAK                                         20 DAY(S)
AREA INDEX: NP12  NP6   NP8

DEP: 26 MAY 87 KODIAK             EEZ PRINCE WILLIAM SOUND
ARR: 12 JUN 87 KODIAK                                         18 DAY(S)
AREA INDEX: NP6

DEP: 15 JUN 87 KODIAK             EEZ PRINCE WILLIAM SOUND
ARR: 02 JUL 87 SEATTLE                                        18 DAY(S)
AREA INDEX: NP6   NP9
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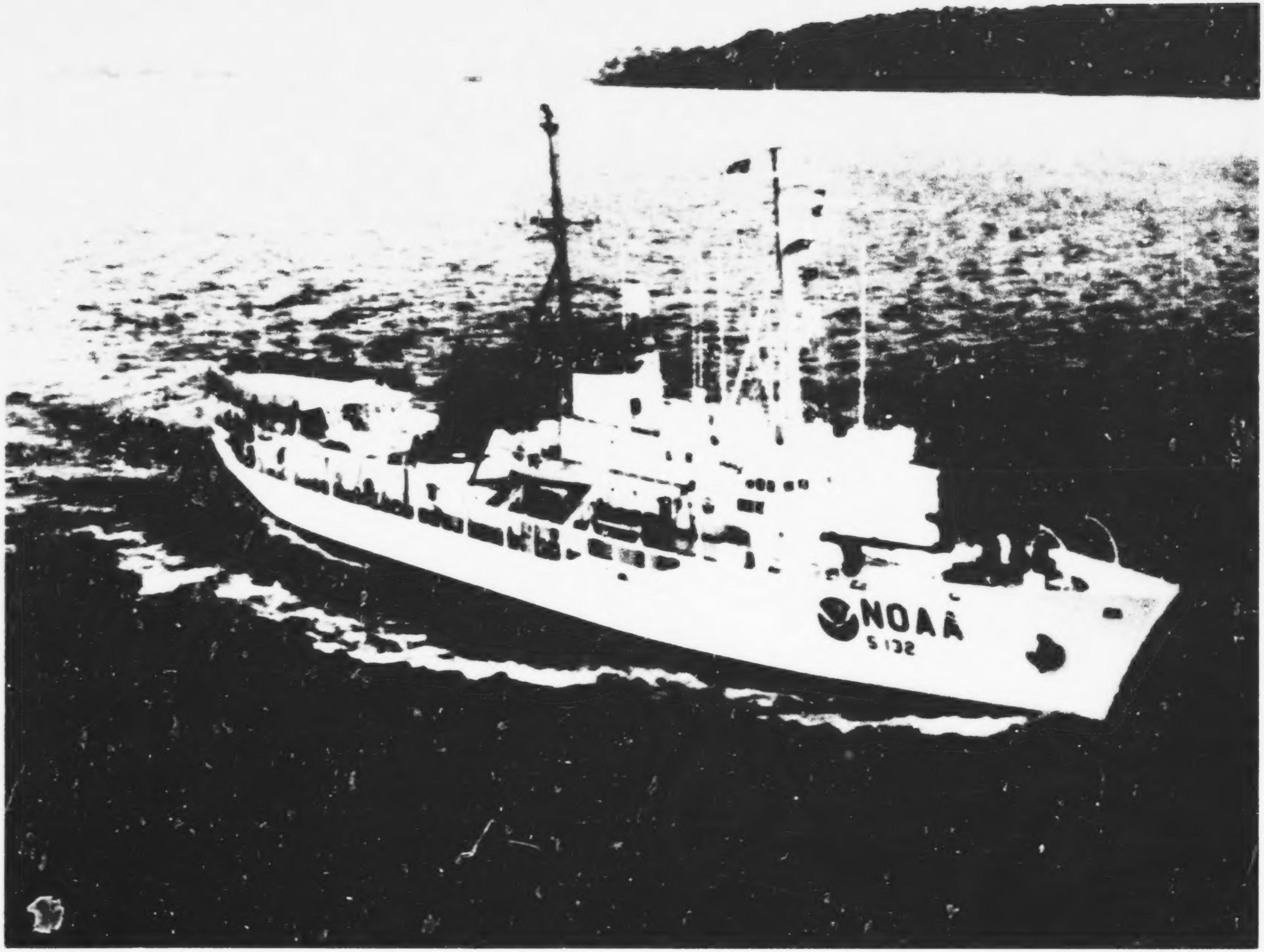

NOAA SHIP SURVEYOR

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      POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                  WHITING
    NAME:                       CDR. R C ARNOLD
    OFFICE:                     CHIEF MARINE SERVICES DIVISION
    ORGANIZATION:               NOAA ATLANTIC MARINE CENTER
    ADDRESS:                    439 WEST YORK STREET
    CITY-STATE:                 NORFOLK VA 23510
    FTS PREFIX:                 827
    COMMERCIAL AREA CODE:       804
    PHONE:                      441-6440


      SHIP DIMENSIONS

    LENGTH:            163.0 FEET
    MAX BEAM:           33.0 FEET
    DISPLACEMENT:        907 TONS
    DRAUGHT:            11.2 FEET
    CRUISE SPEED:       12.0 KNOTS
    RANGE:              5700 NAUTICAL MILES

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                  WHITING                LAST CHANGED 04 FEB 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87
           . . . . . . . . . . . . . . . . . . . . . . . . . .
NOS                                                    NOAA

DEP: 23 FEB 87 NORFOLK            TRANSIT
ARR: 26 FEB 87 NASSAU                                            4 DAY(S)
AREA INDEX: NA6   NA9

DEP: 27 FEB 87 NASSAU             SURVEY OPS-CAT ISLAND
ARR: 13 MAR 87 NASSAU                                           15 DAY(S)
AREA INDEX: NA9

DEP: 16 MAR 87 NASSAU             SURVEY OPS-GREAT INAGUA ISLAND
ARR: 27 MAR 87 GUANTANAMO BAY                                   12 DAY(S)
AREA INDEX: NA9

DEP: 30 MAR 87 GUANTANAMO BAY     SURVEY OPS-GREAT INAGUA ISLAND
ARR: 13 APR 87 NORFOLK              TRANSIT                     15 DAY(S)
AREA INDEX: NA9   NA6

DEP: 13 APR 87 GUANTANAMO BAY     GREAT INAGUA ISLAND
ARR: 25 APR 87 NORFOLK                                          13 DAY(S)
AREA INDEX: NA9   NA6

DEP: 01 JUN 87 NORFOLK            TRANSIT/APPROACHES TO NEW YORK
ARR: 05 JUN 87 NEW YORK                                          5 DAY(S)
AREA INDEX: NA6

DEP: 08 JUN 87 NEW YORK           APPROACHES TO NEW YORK
ARR: 19 JUN 87 NEW YORK                                         12 DAY(S)
AREA INDEX: NA6

DEP: 22 JUN 87 NEW YORK           APPROACHES TO NEW YORK
ARR: 02 JUL 87 NEW YORK                                         11 DAY(S)
AREA INDEX: NA6

DEP: 06 JUL 87 NEW YORK           APPROACHES TO NEW YORK
ARR: 17 JUL 87 NEW YORK                                         12 DAY(S)
AREA INDEX: NA6
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DEP: 20 JUL 87 NEW YORK           APPROACHES TO NEW YORK
ARR: 31 JUL 87 NEW YORK                                           12 DAY(S)
AREA INDEX: NA6

DEP: 03 AUG 87 NEW YORK           APPROACHES TO NEW YORK
ARR: 14 AUG 87 NEW YORK                                           12 DAY(S)
AREA INDEX: NA6

DEP: 17 AUG 87 NEW YORK           APPROACHES TO NEW YORK
ARR: 28 AUG 87 NEW YORK                                           12 DAY(S)
AREA INDEX: NA6

DEP: 31 AUG 87 NEW YORK           APPROACHES TO NEW YORK
ARR: 04 SEP 87 NEW YORK                                            5 DAY(S)
AREA INDEX: NA6

DEP: 08 SEP 87 NEW YORK           APPROACHES TO NEW YORK/TRANSIT
ARR: 18 SEP 87 NORFOLK                                            11 DAY(S)
AREA INDEX: NA6
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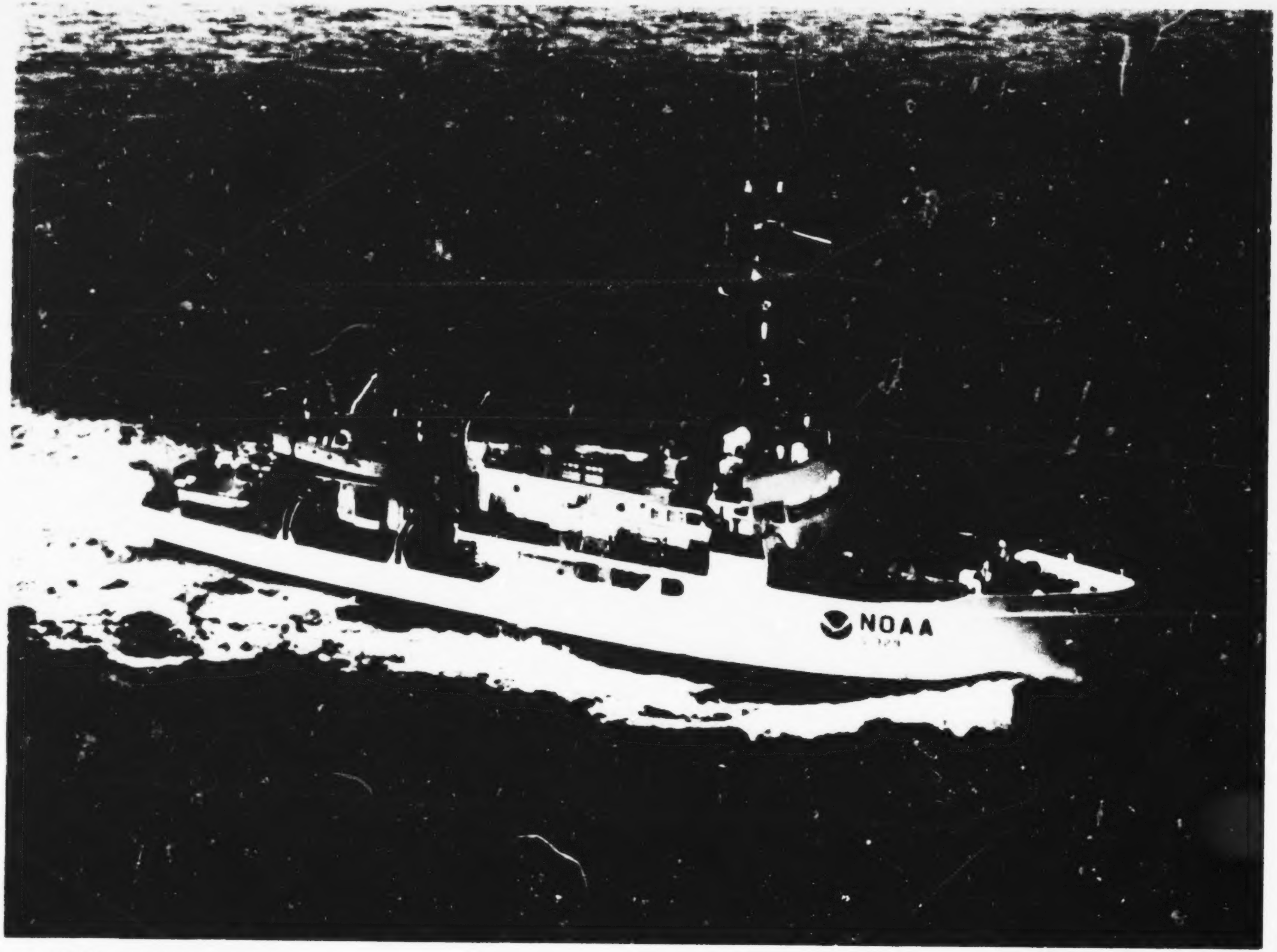

NOAA SHIP WHITING

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     POINT OF CONTACT INFORMATION (SCHEDULES)

   SHIP NAME:                 USNS S P LEE
   NAME:                      MARK HOLMES
   OFFICE:                    PACIFIC BRANCH, OFFICE OF MARINE GEOLOGY
   ORGANIZATION:              U. S. GEOLOGICAL SURVEY
   ADDRESS:                   345 MIDDLEFIELD RD, MAILSTOP 999
   CITY-STATE:                MENLO PARK CA  94025
   FTS PREFIX:                467
   COMMERCIAL AREA CODE:      415
   PHONE:                     856-7141


     SHIP DIMENSIONS

   LENGTH:            208.3 FEET
   MAX BEAM:           39.0 FEET
   DISPLACEMENT:       1338 TONS
   DRAUGHT:            14.2 FEET
   CRUISE SPEED:       11.6 KNOTS
   RANGE:             12000 NAUTICAL MILES
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                  USNS S P LEE            LAST CHANGED 06 FEB 87

                 OPS SCHEDULE FOR PERIOD
                 01 JAN 87 THRU 31 DEC 87

      ...............................................
OCEANOGRAPHIC RESEARCH                                    USGS

DEP: 01 JAN 87 REDWOOD CITY CA     SCHEDULE NOT RECEIVED IN TIME TO PUBLISH
ARR: 31 DEC 87 REDWOOD CITY CA     CONTACT POC FOR INFORMATION    365 DAY(S)
AREA INDEX: NP9
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304

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    POINT OF CONTACT INFORMATION (SCHEDULES)

    SHIP NAME:                PETER W ANDERSON
    NAME:                     EDWARD MCLEAN
    OFFICE:                   MARINE & ESTUARINE PROTECTION WH556M
    ORGANIZATION:             ENVIRONMENTAL PROTECTION AGENCY
    ADDRESS:                  401 M STREET, SW
    CITY-STATE:               WASHINGTON DC 20460
    FTS PREFIX:               382
    COMMERCIAL AREA CODE:     202
    PHONE:                    382-7143


    SHIP DIMENSIONS

    LENGTH:          165.0 FEET
    MAX BEAM:         24.0 FEET
    DISPLACEMENT:      250 TONS
    DRAUGHT:          10.5 FEET
    CRUISE SPEED:     12.0 KNOTS
    RANGE:            2448 NAUTICAL MILES

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                    PETER W ANDERSON        LAST CHANGED 17 NOV 86

                   OPS SCHEDULE FOR PERIOD
                   01 JAN 87 THRU 31 DEC 87

          ..........................................
OCEANOGRAPHIC MONITORING                                EPA

DEP: 05 JAN 87 PORT TBD          HUDSON RIVER MONITORING
ARR: 20 JAN 87 PORT TBD                                             16 DAY(S)
AREA INDEX: NA6

DEP: 27 JAN 87 PORT TBD          GULF OF MEXICO MONITORING
ARR: 30 MAR 87 PORT TBD                                             63 DAY(S)
AREA INDEX: NA6   NA9

DEP: 01 APR 87 PORT TBD          EAST COAST MONITORING
ARR: 27 APR 87 PORT TBD          VICINITY OF CHARLESTON SC          27 DAY(S)
AREA INDEX: NA9   NA6

DEP: 04 MAY 87 PORT TBD          GULF OF MEXICO MONITORING
ARR: 15 MAY 87 PORT TBD                                             12 DAY(S)
AREA INDEX: NA6   NA9

DEP: 21 MAY 87 PORT TBD          EAST COAST MONITORING
ARR: 30 OCT 87 PORT TBD          AREA FROM SAVANAH GA TO BOSTON    163 DAY(S)
AREA INDEX: NA6

DEP: 01 NOV 87 PORT TBD          TO BE ANNOUNCED
ARR: 30 DEC 87 PORT TBD                                             60 DAY(S)
AREA INDEX: NA6   NA9
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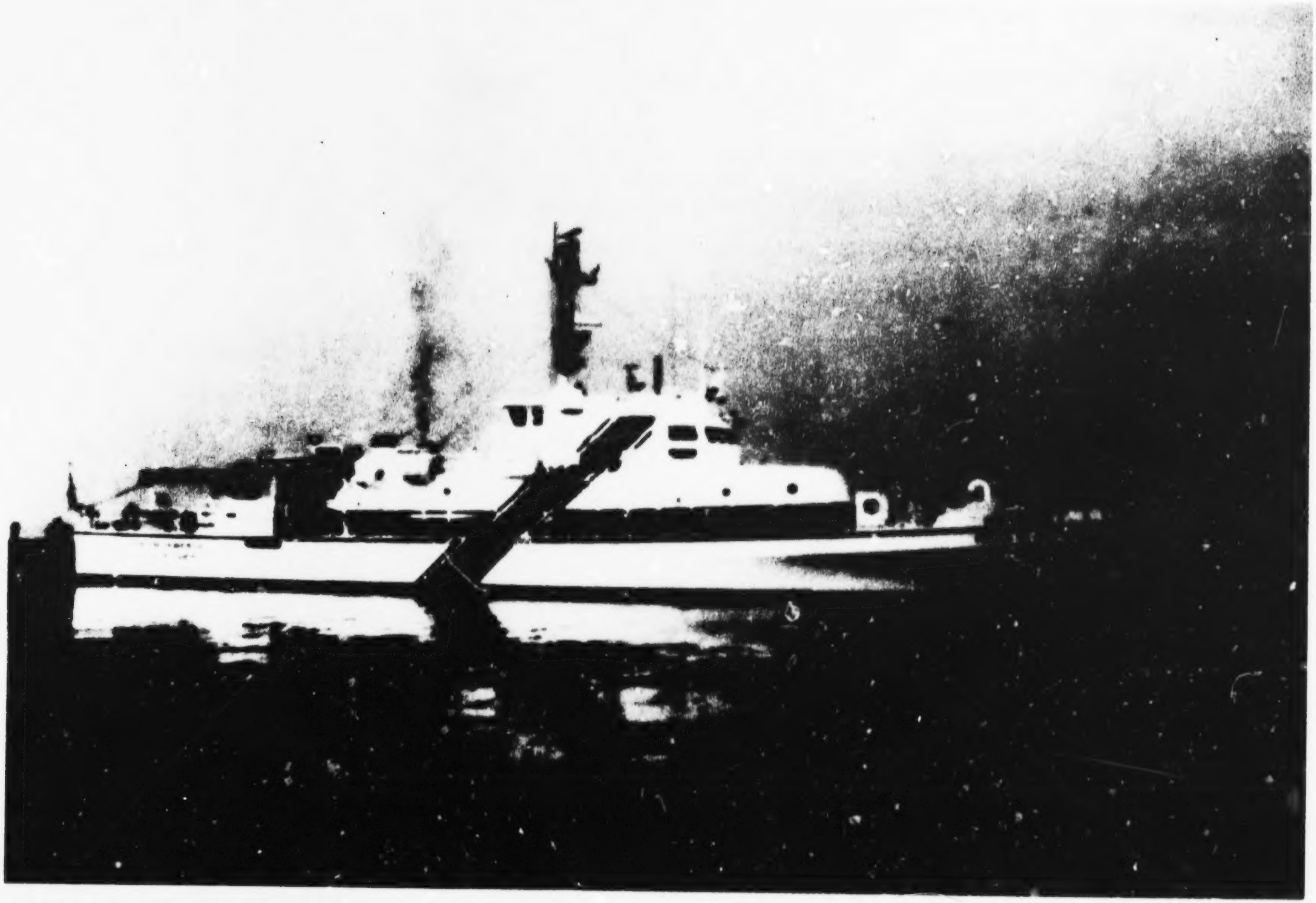
BEST COPY AVAILABLE



EPA PETER W. ANDERSON

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          OPEN (UNOBLIGATED) OCEANOGRAPHIC SHIP TIME
*******************************************************
          **** COLUMBUS ISELIN          ****
          ........................................

DEP: 10 MAY 87 MIAMI
ARR: 13 JUL 87 MIAMI                OPEN                        65 DAY(S)

DEP: 17 SEP 87 MIAMI
ARR: 10 OCT 87 MIAMI                OPEN                        24 DAY(S)

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          **** ENDEAVOR                 ****
          ........................................

DEP: 18 APR 87 NARRAGANSETT
ARR: 29 APR 87 NARRAGANSETT         OPEN                        12 DAY(S)

DEP: 01 JUN 87 NARRAGANSETT
ARR: 19 JUN 87 NARRAGANSETT         OPEN                        19 DAY(S)

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          **** MOANA WAVE               ****
          ........................................

DEP: 23 DEC 87 TAHITI
ARR: 31 DEC 87 TBD                  OPEN                         9 DAY(S)

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          **** POINT SUR                ****
          ........................................

DEP: 01 MAR 87 MOSS LANDING
ARR: 15 MAR 87 MOSS LANDING         OPEN                        15 DAY(S)

---------------------------------------------------
          **** POLAR DUKE               ****
          ........................................

DEP: 13 MAY 87 PUNTA ARENAS CHILE  CRUISE V-87 OPEN FOR SCIENCE PROJECTS
ARR: 31 MAY 87 PUNTA ARENAS CHILE                               19 DAY(S)

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          **** ROBERT D CONRAD          ****
          ........................................

DEP: 08 OCT 87 GIBRALTAR
ARR: 23 OCT 87 BERMUDA              OPEN                        16 DAY(S)

---------------------------------------------------
          **** THOMAS WASHINGTON        ****
          ........................................

DEP: 07 JAN 87 SAN DIEGO
ARR: 23 JAN 87 SAN DIEGO            OPEN                        17 DAY(S)

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          **** WESTWARD                 ****
          ........................................

DEP: 28 AUG 87 GLOUCESTER MA        OPEN
ARR: 25 SEP 87 MYSTIC CT                                        29 DAY(S)
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